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SUBJECT INDEX TO THIS ISSUE

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STANDARDS OF OPHTHALMOLOGY*

GEORGE S. DERBY, M.D.

BOSTON

In 1906, the American Medical Association held a meeting in Boston, and my interest in what this section offered to me personally was instantly awakened. What especially appealed was an association open to all men of good standing in their respective communities; well run meetings with papers printed in advance, and discussions quite as carefully prepared as the papers themselves. Our papers are often of great merit, but I think you will agree that it is the excellent discussion that distinguishes our section from the other societies that we attend.

In 1913, with much joy and greater trepidation, I became secretary of the section, and served in that capacity with the exception of two years during the war, until you did me the great honor of electing me chairman, an honor for which I thank you from the bottom of my heart. These nine years of service have been a privilege to me. The benefits I received from my section work, the making of many friends and acquaintances all over the country, the constant stimulation of outside contacts far overpaid me for the time I spent in its service. The close contact that I have had with the splendid men who have been my superior officers since 1913 formed an unexcelled opportunity for growth. The work itself was never arduous, it was a well oiled, smoothly running machine when I took hold, and I can only hope that it has not deteriorated during my term of office. If it has, then I believe we have in our present secretary one who will put it on its feet again, and will insure its progress during his term of office. And here I should like to say that I believe the policy of having a long term secretary, as is now the custom in this section, is one that emphatically should be continued. Our parent association recognized this when, a few years ago, the secretary's term in all the sections was fixed at three years instead of one.

A word in regard to the Knapp Fund. This fund constitutes a great power for good. Without it, the section could not continue its present activities. With a larger fund, its activities could be greatly increased. With such a membership as we have, it should be possible to lay by a substantial sum of money each year. Among its uses, I may refer to the fact that the expenses of the secretary are taken care of each year. No secretary can operate efficiently on the $75 allowed him by the association. Postage alone will swallow up most of this. The expense of invited guests is borne by the Knapp Fund; grants for research are made from time to time, and, also, the granting of a medal for a specially meritorious paper. You will find details of the Knapp Fund in the presession volume and in the transactions. I commend it to your attention.

PURPOSE OF SECTION

One of the functions of a society such as ours is to elevate the standard of ophthalmology. We may do this in several ways. Some of our papers contribute new facts to the science of medicine; others, although they contain nothing actually new, provide much that is interesting and educational. Our discussions often clarify subjects on which a definite conclusion is hard to obtain from a study of existing authorities. Our committee reports are often of great value. In a nation like this, made up of many states, it is very difficult for state authorities with conflicting customs and laws to get together and formulate legislation on medical matters for all. As a matter of fact, the futility of such an attempt is recognized. Consequently, it devolves on great and commanding associations such as ours to blaze the way. I hope that our committee on compensation this year has given us something that can be used as a basis for compensation laws throughout the country. The report on infiltration anesthesia is full of suggestive facts, and may be read with benefit by all. Visual tests for motor drivers have become a matter of great importance. They have been taken up by some of our states and by some European countries. The matter is in its infancy in this country; a well considered pronouncement by this section would carry great weight. You have seen, in our presession volume, the report of our committee.

Another way of raising the standard of ophthalmology is by the force of ophthalmologic public opinion. For many years in this country there has been and for many years there will be subtle influences that tend to bring the practice of a trade into our profession. A large part of our time must necessarily be spent in the examination of the eye for glasses. Practically every individual who lives to mature years must at some time obtain for himself a pair of glasses. Most people must obtain many pairs during the course of their lives. In sparsely settled communities and in many of the small towns, there are no opticians or at least no reputable ones, and thus the ophthalmologist must not only test the refraction but also measure his patients for a suitable frame, order the lenses and frame, and adjust and deliver them to the patient. All this is a tax on the ophthalmologist's time, and no one will argue for a moment that he should not be paid for the actual time he spends. A charge for this is eminently right and proper. How much this charge should be must in each instance be decided honestly and on its own merits. It is unfortunate that the situation is as I have described

* Chairman's address, read before the Section on Ophthalmology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

it; but so it is, and the men who are faced with such conditions should always remember that they are practicing a noble profession and not working at a trade.

ABUSES

Unfortunately, the retail profit on glasses is large (100 per cent. seems to be a fairly good estimate), and abuses have crept in, so that, in many communities, it has become the custom for certain ophthalmologists to accept commissions from opticians. The patient is examined; a prescription is given, and he is referred to the optical house, which supplies him at the retail rate and sends a commission, often the difference between the wholesale and the retail price, to the oculist who referred the patient. This practice is by no means confined to one section of the country, but I believe it to be a less frequent practice in the older cities. It seems clear to me that, when stripped down to the bare facts, the practice is a dishonest one, equal to the splitting of fees, and that our eye societies, local and national, should refuse to admit such men to their membership.

Here is the situation in a city of 250,000, west of the Mississippi, and I have every reason to believe that the information is accurate. There is one oculist who owns an optical business; four who accept commissions or rebates; at least eight who dispense their own glasses, and ten who send their patients to opticians and do not receive commissions or rebates.

Now, as regards the men who dispense their own glasses, although living in large cities where it is reasonable to suppose that there are reputable opticians: I do not mean, even in the remotest way, to class them with those I have just mentioned. I know many such men of high standing and probity who believe that they are fulfilling a duty toward their patients. In their offices, they give the services of a first-class optician to their patients, and believe that their patients are better served than if sent to opticians who give out that they do only prescription work. Ordinarily, I assume that they charge the patient the difference between the wholesale and the retail rate, and they believe that the service they give is equal to the price paid. Their argument is that even the best optical houses will, perhaps, with very few exceptions, change prescriptions on their own initiative, fit presbyopic corrections, often sell the patient, on one pretext or another, glasses and frames that he cannot afford to buy, that they are often careless and inefficient and, moreover, that the patient very frequently asks the ophthalmologist to get the glasses for him. I grant all this, but I submit, first, that the selling of glasses should be in the hands of the optician. Ours is a profession and not a trade. We cannot afford to face the charge of making a profit out of the glasses we supply. Moreover, we should use our every endeavor to assist the optician to a high plane of service. Taking the trade away from him does not do this.

One of the best known retail opticians in the country has many branches. One of these branches in a city not far from here advertised to examine eyes. In defense of this, the following letter was received by one of our colleagues:

Dear Doctor:

Your favor of July 30 with its enclosure is received, and in response to your request we are returning the advertisement which you clipped from the ——— newspaper. We are very glad indeed that you did send this to us inasmuch as it gives us an opportunity to shed light upon a subject which might otherwise leave an entirely wrong impression in your mind and in the minds of others to whom you may show it.

It is a positive fact that this business is founded upon a purely dispensing policy. It has always been our desire and our effort to conduct our affairs so that that policy might be adhered to in spirit and letter. In the East, competition of a different type of optician makes the adherence to that principle difficult, especially since the oculists themselves are rather inactive in their support of the few opticians like ourselves who continue the dispensing thought. In the West, competition comes largely from the oculists who have fired the first gun by installing their own optical departments and not only selling glasses to such people as they refract but even plucking as their own customers such people as have been referred by opticians. You may be sure that the advertisement to which you refer is no more pleasant to the eyes of Mr. ——— than it was to yourself, but in his realization of the entirely unethical conditions which existed in ——— he gave his consent to the only means left the business to preserve itself. In short the only difference between the oculist and the optician in ——— is that the oculist does not advertise in the newspapers yet. The local situation is one which is extremely interesting to us and we are more strongly in favor of our original policy than we ever have been. The writer, however, has made a considerable study of it and believes that if there were a willingness on the part of medical men of ——— [a large eastern city] to cooperate with the dispensing opticians, who in a way are essential to a considerable part of their practice, a great mutual good could be accomplished.

NEED FOR RELIABLE OPTICIANS

I can see no reason why cities of 50,000 or 100,000 or over should not have one respectable and reliable optician or more if, and this is a very big if, they are supported by men in our specialty. In other words, it depends largely on us. I believe it is perfectly possible in the larger cities for the ophthalmologists to get together with the opticians, and come to a working agreement which will be reasonably satisfactory to both. To say that this is not possible and that all opticians are hopeless and that, therefore, we must supply glasses to our patients, seems to me destructive and not constructive criticism. I venture to say that it is not the way to get the commercialism out of medicine and to raise the ethics of our specialty.

Here is a portion of a letter from a prominent ophthalmologist whom you all know and who practices in a city of about 200,000 inhabitants:

When I first came here you could send prescriptions to the opticians, who were an ignorant lot and could not even fit frames, or to one or two jewelry stores who handled the situation with even less satisfaction. These people were actively engaged in the fitting of glasses themselves. The other thing to do was to have your work done by somebody like ——— and furnish the glasses yourself. It was customary when one did this to charge a profit to pay for the extra time and trouble, also to cover the many items of loss. After a while a wholesale house was opened up here, and many of us did business with them on the same basis. This worked around to an arrangement which most of the men follow out now to this effect. The patient takes the prescription to the wholesaler, who collects from him the retail price of the glasses. He charges the oculist with the wholesale price, and credits him with the difference. On the first of the month he remits to the oculist a check for what this difference amounts to. I could not see this arrangement, and have personally arranged with the optician to sell the glasses to the patient on my prescription for the wholesale price plus $1 per job for fitting the frames, and plus another $1 for which they will repair breakage free of charge within a week or two, and also change the glasses free of charge within a month. I also have an understanding with two optometrists that they would make a 25 per cent. reduction to patients on my prescriptions.

There are good and bad opticians, just as there are good and bad doctors. I believe, however, that many of them are high minded and wish to do right. It is too bad that the many high minded ones should suffer for the sins of those that are not. The opticians are conducting a business, however, and every man wishes to have his business successful. I believe that the so-called prescription optician who pays a bonus to his employees on the amount of his personal sales should be banned. The advent of the successful optometrist puts another temptation in the way of the prescription optician; perhaps he is not well supported by the ophthalmologists, and he seeks side lines in which he may increase his intake. People wish to have their eyes tested, and it is hard to refuse them. It is hard not to sell more expensive lenses or frames than the patient needs. We see every level between the high minded dispensing optician, who conducts his business in a perfectly legitimate way, and the man whose sole aim is to make his sales as high as possible. Here is an article published in an optical journal, and entitled, "Overalls and Gold." The hero is Mr. Aronsfeld of Galveston. He tells of examining the eyes of a working man who was wearing overalls and a jumper. Mr. Aronsfeld sold him a solid gold frame and cryptok lenses, probably at least $25 worth. The article goes on to state that if Mr. Aronsfeld had shown this man a cheaper frame and ordinary reading glasses he might have got only five or six dollars out of him. The journal goes on to say, "The sale of solid gold frames is largely a matter of presentation. It is not hard to talk about gold so that one's patient will feel that he must have it above all else." Mr. Aronsfeld was a good salesman. The moral pointed out is, "Go thou and do likewise."

A powerful and rich organization of opticians and optometrists, the Eyesight Conservation Council, with a board of directors from the President's cabinet down, is now conducting an active campaign, which they state to be for the conservation of eyesight throughout the country. They have come to the offices of your section, recently, with an invitation to appoint a committee for the purpose of looking into their activities, as they recognize that the expert knowledge which we could give them would be of great advantage. It is hard for us to believe that this organization can be acting from entirely altruistic motives, but I suggest that their advances should be given most careful consideration.

Not even in our older eastern cities is the optical situation entirely satisfactory. We have minor points of difference with our opticians. Only recently in my city, a meeting of ophthalmologists has been held to consider the subject. We felt that many of our patients were paying too much for their glasses; that persons of limited means were being sold unnecessarily expensive frames and lenses, and that the opticians were not careful enough in what they said to patients. By getting together with our best opticians, I believe that we have solved many of our difficulties, and that our patients, on the whole, will get reasonably satisfactory service.

I can't help feeling that, while in the hands of the highest minded members of our specialty, the supplying of glasses from their own offices may have some justification, yet, taken by and large, it is a bad principle and leads rapidly to abuse in the hands of those who are not so high minded. The less high minded man sees a substantial profit in the transaction—why should it not come to him instead of going to the optician? He is loath to give up this profit, and justifies himself by the undoubted fact that, even among the best opticians, abuses do creep in from time to time.

As I said before, I believe that the principle is wrong, and that the way to right it is to back the high type opticians whole heartedly, and to insist on proper service from them. I believe we will get it.

CONCLUSION

I hope that some day the American Medical Association will go on record to the effect that any ophthalmologist who accepts a commission from an optician is unworthy of membership. I further hope that our large and small ophthalmologic societies will adopt the policy that I have urged; that is, to discourage, whenever possible, the practice of selling glasses in the office, to back the high class opticians whole heartedly, and, by concerted action, to require that he should conduct his business on a high level. Such a course would, I believe, not only raise the ethics of our profession as they should be raised, but, in addition, also raise the ethics of the optical trade.

NOTE.—The following resolutions were passed by the American Ophthalmological Society, June 16:

Resolved, That we deprecate the selling of glasses by the ophthalmologist to the patients in communities where the services of reliable dispensing opticians are obtainable.

Resolved, That the acceptance of commissions or considerations, either directly or indirectly, by ophthalmologists from opticians and optical houses is absolutely contrary to all our standards of medical ethics and is just as reprehensible as the splitting of fees.

At the meeting of the Section on Ophthalmology in Chicago, the Committee on the Optical Question reported as follows:

At the request of the Judicial Council, your committee has considered the two questions of the furnishing of glasses by the ophthalmologist to his patients, and the acceptance of commissions by ophthalmologists from opticians and optical houses.

Your committee feels that the acceptance, either directly or indirectly, of a fee or consideration from the sale of glasses is so pernicious, reprehensible and underhanded as to require no comment. It should be stopped and our section should impose such penalties as lie within its power and recommend to the national societies the rejection of the application of ophthalmologists for membership who pursue such practices.

Your committee therefore recommends the adoption of the following resolution:

Resolved, That it is the sense of the Section on Ophthalmology of the American Medical Association that we deprecate the selling of glasses by the ophthalmologist to his patients in communities where the service of reliable dispensing opticians are obtainable.

Resolved, That the acceptance of commissions or considerations, either directly or indirectly, from opticians and optical houses, from the sale of glasses, is absolutely contrary to all our standards of medical ethics, and is just as reprehensible as the splitting of fees.

WILLIAM ZENTMAYER, Chairman.
ALLEN GREENWOOD,
MELVILLE BLACK,
WALTER SCOTT FRANKLIN,
Committee.

The resolutions were adopted.

Mobilization Plans.—Training is a problem to which there is no simple solution. In peace and in the earlier phases of mobilization we can never hope to have enough of it to satisfy even our minimum needs. . . . But for the present, of course, we are enrolling hundreds of men of World War experience, and again we are perpetuating units which functioned during the war. Training of the corps and divisional medical units is a corps area responsibility. These units will not ordinarily be called upon to care for the sick and wounded of local commands. . . . During the first part of mobilization, units will be called upon to perform in an almost improvised state, and with little or no unit training. For a while this will be an ordeal for all concerned, but as you may expect, such units will be selected with exceeding care from among those of outstanding promise.—Merritte W. Ireland: Formulation of Mobilization Plans, *Military Surgeon*, July, 1924.

THYMUS OF NEW-BORN AND ITS SIGNIFICANCE TO THE OBSTETRICIAN *

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Investigations on the thymus of the new-born, as presented in this communication, were undertaken with the idea of solving certain problems connected with the thymus, of paramount importance to the obstetrician. The latter has charge of the new-born infant for at least two weeks following delivery. After the mother is up and about, he may, if he chooses, turn the infant over to the pediatrician. However, during this interval, with very few exceptions, the welfare of the new-born infant is his responsibility, and cannot be shifted. He must ever be on the alert to detect in the new-born infant signs of thymic disturbance. Ignorance or carelessness in this regard will no longer be excused, since it is becoming a part of common knowledge that babies often die from some disturbance of this gland. Then, too, in this day and age of preventive medicine, the welfare of the child is quite as important as that of the mother, and it becomes the duty of every accoucheur to prevent, if possible, future complications from thymic disturbances.

TABLE 1.—*Relation of Exanthems in the Mother to Thymic Hyperplasia in the Infant*

Complication	Number of Cases	Number with Thymic Hyperplasia	Number Without Thymic Hyperplasia
Syphilis	9	2	7
Pneumonia	2	1	1
Grip	3	1	2
Acute respiratory infection	2	2	0
Acute gingivitis	1	0	1
Eclamptic toxemia	2	0	2
Pyelitis	1	0	1
Acute gonorrhea	2	0	2
Epilepsy	1	1	0
Pott's disease	1	0	1
Feeblemindedness	4	2 (twins)	2

Observations were made on the incidence of thymic hyperplasia, and its significance, in 120 infants consecutively born in the maternity division of the university hospital. While we were primarily interested in the study of the thymus of the new-born, our investigations included a majority of the mothers, since we were cognizant of the fact that some relation exists between thymus abnormality in the infant, and antenatal disease of the mother.

In all, ninety-six mothers were studied. One woman had twins, each infant having an abnormally large thymus. The mothers were studied with respect to age, glandular dyscrasia, multiparity and antenatal complications. Because of the close relationship apparently existing between acute infectious diseases and thymic hyperplasia, especial attention was given such antenatal complications. Fortunately, most of the women were under observation in the clinic from one to two months previous to delivery. This permitted close observation during this portion of the antenatal period. Histories were relied on for information concerning the earlier months of pregnancy. Some of these histories were undoubtedly inaccurate, because of the low mentality of the patients. The results obtained from the study of these ninety-six mothers are briefly as follows:

ANTENATAL COMPLICATIONS

Of the ninety-six mothers studied, twenty-eight showed antenatal complications of sufficient importance to be considered. In this group of twenty-eight, nine, or 32 per cent., had infants with abnormal hypertrophy of the thymus. Four, or 44 per cent., of this number, occurred in infants of mothers having had an acute disease during the antenatal period. It is unfortunate for purposes of this study that a large number of acute infectious diseases complicating pregnancy were not available for study. While there were no histories of acute infections earlier in pregnancy in the ninety-six women, it is possible that such illnesses may have been forgotten or unreported in the histories.

Hennington [1] and others have mentioned that the thymus undergoes rapid involution or shrinkage in chronic wasting diseases. In acute infectious diseases, there apparently exists a marked tendency toward enlargement. The existence of such a relationship between the thymus of the fetus and the antenatal complication of the mother seems a reasonable assumption. The transmission of acute exanthems from mother to child in utero has been shown many times. Table 1 shows the complications, and distribution in relation to the thymic infants.

Probably the most noteworthy information obtained from this study is the effect of syphilis on thymic hypertrophy. Thus, of the nine cases of syphilis appearing in both mother and child, only two of the infants revealed an abnormally large thymus. Hence it can scarcely be said, from this evidence, that syphilis materially increases the tendency to thymic hypertrophy. It will also be noted that the incidence of thymic hyperplasia is greater in those cases in which the mother suffered from some acute respiratory infection, than when the infection was localized, as in pyelitis and gingivitis. A variety of complications was exhibited by the ninety-six mothers, but the number was unfortunately small. Further investigation in this respect, with special reference to acute illnesses, would be valuable.

AGE OF THE MOTHER

The fact that the clinic is composed chiefly of young unmarried women was valuable in permitting the study of thymic hyperplasia in the infants of very young mothers. Thus, of the 112 mothers whose ages were obtainable, the average age was 22 years. The average age of the mothers with infants revealing thymic hyperplasia was 24 years, while those with no thymic hyperplasia in the offspring showed an average of 20 years. The youngest mother of the group was 14; the oldest, 42. A further analysis of this group revealed several interesting facts.

A study of Table 2 shows the marked increase in the incidence of thymic hypertrophy in infants, with the increase in the age of the mothers. Thus, in the three mothers aged 14, we find no infants with thymic hypertrophy, while, in five of the mothers aged 35 or older, five infants had an abnormal thymus. Infants born of mothers between the ages of 15 and 20 showed enlarged

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Hennington, C. W.: Buffalo M. J. 70: 611, 1915.

thymus in 33 per cent. In the next group, i. e., mothers between the ages of 20 and 25, we find 44 per cent. of infants with enlarged thymus; between the ages of 25 and 30, 52 per cent.; between the ages of 30 and 35, 55 per cent., and, in the ages from 35 to 42, 100 per cent. Because of the relatively small group of mothers studied, the percentages must be taken as simply indicating the tendency to thymic hyperplasia in the infants of elderly mothers, Perhaps more striking is the fact that 37 per cent. of all infants in this series born of mothers aged 25 years or younger showed thymic hypertrophy, while 57 per cent. of the mothers aged 25 years or older had infants with the same condition.

TABLE 2.—*Age of Mother in Relation to Thymic Hyperplasia in the Infant*

Age of Mother	Number of Cases	Infants Showing Thymic Hypertrophy	Infants Showing Normal Thymus
14 years	3	0	3
15 years	5	1	4
16 years	6	2	4
17 years	7	3	4
18 years	12	4	8
19 years	6	2	4
20 years	10	5	5
21 years	9	4	5
22 years	4	2	2
23 years	5	1	4
24 years	8	4	4
25 years	4	3	1
26 years	2	2	0
27 years	5	2	3
28 years	7	3	4
29 years	5	2	3
30 years	1	1	0
31 years	2	1	1
32 years	7	3	4
33 years	..	..	..
34 years	1	1	..
35 years	3	3	..
36 years	..	..	..
37 years	..	..	..
38 years	..	..	..
39 years	..	..	..
40 years	1	1	..
41 years	..	..	..
42 years	1	1	..

MULTIPARITY

Again we find the facts peculiar in respect to multiparity. As previously mentioned, the bulk of the clinic is composed of young unmarried girls. This accounts for the fact that eighty-four, or 70 per cent., of the 119 mothers studied were primaparas, while forty-five, or 30 per cent. were multiparas. The distribution of infants with enlarged thymus glands is shown in Table 3.

The relation of multiparity to thymic hyperplasia in the offspring is at once apparent. Thus, only 34 per cent. of primaparas had infants with enlarged thymus glands, while 66 per cent. of multiparas had infants with this condition, almost twice as many. Further, the incidence appears to increase with the multiparity. Thus, we find, in secundiparas, that the rate of infants with thymic hypertrophy is 40.6 per cent.; in tertiparas, 66 per cent., while all the infants of quadriparas, quintiparas and sextiparas had enlarged thymus glands. This observation, if borne out by the study of larger series of such cases, would indeed be significant.

ENDOCRINOPATHY IN THE MOTHER

Hennington,[1] quoting Kocher, states that, in nearly 60 per cent. of all cases of exophthalmic goiter, a tendency to hyperplasia or tardy involution of the thymus is present. Houghton[2] is of the opinion that 90 per cent. of all enlarged thyroids are accompanied by hyperplastic thymus glands. Assuming that some such close relationship exists in adults, what is the relation of endocrinopathy in the mother to enlarged thymus in the offspring? With this question in mind, 102 mothers were studied for evidence of glandular disturbance. Of this number, not one revealed any discernable glandular pathologic condition other than simple hypertrophy of the thyroid. Thirty-seven, or 36 per cent., revealed a visible and, of course, palpable thyroid. None showed any positive evidence of hyperthyroidism. Eighteen of the infants from this group of thirty-seven mothers, or 48 per cent., showed abnormally large thymus glands. In our clinic, 34 per cent. of all infants with thymic hyperplasia come from mothers with enlarged thyroids. The fact that 36 per cent. of the mothers revealed an enlarged thyroid is interesting, and may be accounted for by the fact that Michigan lies in a distinctly goitrous region. A high rate, therefore, is to be expected. It is difficult to state from this observation alone whether the thyroid plays any part in the frequency of thymic hyperplasia in the infant. Comparison of the frequency of enlarged thymus in the new-born in this series, with the findings of other observers in less goitrous districts, would make this appear doubtful. Thus, Blackfan and Little,[3] in a study of sixty cases, found thymic hyperplasia in twenty-nine, or 48 per cent. Liss,[4] in a study of 119 cases, found a large thymus in approximately 42 per cent. Our own investigations showed 43 per cent. of new-born infants with enlarged thymus. While neither of the foregoing investigators mention the occurrence of goiter in the mothers, their clinics are not in particularly goitrous regions, and a comparison of findings shows but slight variation. Apparently, the relationship between enlarged thyroid and thymus is confined largely to the individual, a relationship between mother and child appearing doubtful. No information is available to show what connection, if any, exists between hyperthyroidism or other glandular disturbance in the mother, and thymic hyperplasia of the offspring.

CLINICAL AND ROENTGENOLOGIC STUDY OF INFANTS

A study of the infants themselves was no less interesting. Both clinical and roentgen-ray procedures were utilized. Roentgen-ray evidence of a distinct abnormally enlarged thymus formed the actual basis for this study. This does not mean that known clinical procedures were not utilized, but simply that more value was placed on the positive evidence, as demonstrated by the roentgen ray, than on the frequently doubtful

TABLE 3.—*Relation of Multiparity to Thymic Hypertrophy in the Offspring*

Parity	Number of Cases	Infants Showing Enlarged Thymus	Infants Showing Negative Thymus	
			Number	Per Cent.
Primiparas	84	29	55	34
Secundiparas	12	5	7	..
Tertiparas	9	6	3	..
Quadriparas	3	3	..	..
Quintiparas	3	3	..	..
Sextiparas	2 (twins)	2 both enlarged	..	66
Septiparas	2	1	1 borderline	
Octiparas	4	3	1 borderline	

2. Houghton, H. A.: A Sign Diagnostic of Hyperplastic Thymus, J. A. M. A. 65: 323 (July) 1915.

3. Blackfan, K. D., and Little, K.: Clinical and Radiographic Study of Thymus in Infants, Am. J. Dis. Child. 22: 459 (Nov.) 1921.

4. Liss, I. E.: Thymic Shadow, Am. J. Dis. Child. 24: 192 (Sept.) 1922.

information obtained by percussion, etc. Of the 120 infants studied, fifty-two, or 43.3 per cent., showed an abnormal enlargement of the thymus.

Stereoscopic films were made of the chest in 100 cases, while twenty were studied by means of the fluoroscope. This was done to compare the relative merits of the procedures, as well as to study variations in the size of the thymus on respiration.

The roentgenograms were made in the department of roentgenology of the university hospital, and were all studied and passed on personally by the head of the department, Dr. Preston M. Hickey.

The technic used may be briefly summarized as follows: The usual postero-anterior position was used. The focal distance was 40 inches. The average time of exposure was from one-fifth to one-tenth second, with 60 kilovolts and a milliamperage of 50. In all cases, the exposures were made as nearly as possible at the end of expiration, a double screen with superspeed films being used.

Fluoroscopic study revealed a definite fluctuation in the size of the thymus during respiration and, more especially, when the infant was crying. This has been pointed out by other observers. This observation was very definite in those infants showing an abnormal enlargement. The thymic shadow diminished on inspiration, and enlarged on expiration, appearing largest just at the end of expiration. It will readily be seen that slight enlargements of the thymus might well throw a confusing shadow, depending on the time of exposure. In the case of large thymus glands, however, the shadows were such as to leave but slight doubt as to the hyperplasia, irrespective of whether the films were taken during inspiration or expiration. In general, however, the importance of obtaining the exposure just at the end of expiration, when the thymic shadow is largest, is apparent. Borderline enlargements might easily be overlooked if the respiratory cycle is disregarded.

A study of the cardiac cycle gave no evidence of its affecting the thymic shadow. The heart cycle is apparently too rapid, and the change in volume too small, to alter materially the thymic outline.

A comparison of the two methods of roentgen-ray study may be of value. The fluoroscopic procedure appeared scientifically more accurate, and variations in the size of the thymus were of course apparent. The permanent record obtained in film taking, however, is missing, a possible disadvantage of the fluoroscopic method. If the proper time of exposure is chosen in film taking, the disadvantage from fluctuation in the size of the thymus as a source of error may be obviated. In general, the stereoscopic film would appear of more practical value. The fluoroscopic method, however, conveys more data. Both methods require considerable technical skill, and the shadows during fluoroscopy appear more difficult of interpretation than those of a good thymic film.

The clinical study of these infants included percussion, a study of the general appearance, weight, size, sex, maturity, symptoms, deaths and necropsies. The popularity and accuracy of roentgen-ray diagnosis reveals to a certain degree the dissatisfaction that exists with the results obtained by clinical methods alone. This does not necessarily indicate that clinical procedures are without value. The ease with which the former may be had, however, does not tend to develop skill in the clinical diagnosis of the condition. The indefinite and vague information generally obtained on percussion, in comparison with the positive roentgen-ray findings, explains to a great extent the abandonment of the former. Simple percussion for thymic dulness is of questionable value. Unless some definite information can be obtained by this procedure, its diagnostic value cannot be great. In attempting to check accurately the percussion and roentgen-ray findings of this series, several methods were utilized. At first, a lead fuse wire was fastened to the chest wall along the line of dulness obtained on percussion. Later, an ink made of barium and lead was used. Neither of these methods proved entirely satisfactory. The slightest twisting of the body, the slightest rotation of the chest, produced a distortion and misrepresented the percussion findings. Percussion findings alone were not conclusive. The diagnoses of apparent enlargements, made by percussion alone, are undoubtedly influenced by the appearance of the infant, and any knowledge the examiner may have regarding existing symptoms. Therefore, in view of the indefinite value and the vagueness surrounding the results obtained, percussion procedures were disregarded.

SEX OF THE INFANTS IN RELATION TO THYMIC HYPERPLASIA

Of the 120 infants studied, fifty-four were girls, and sixty-six, boys. Twenty of the fifty-four girls, or 37 per cent., revealed abnormally enlarged thymus glands. Thirty-two, or 48 per cent., of the boys showed the same condition.

Why enlarged thymus should occur in 11 per cent. more males than females is unknown. Necropsy reports reveal the interesting fact that status lymphaticus is six times more common in males than in females. Satisfactory explanation of this seems doubtful, other than to classify it with the group of sex predilection diseases.

GENERAL APPEARANCE AND SIZE OF INFANTS

The general impression gained from a study of the infants was that there existed a slight difference in the size of the chest in those with and those without thymic hyperplasia. This difference in chests was slight and of doubtful practical value. Fulness of the chest is apparently a characteristic of the male sex and, as such, has no special bearing on the existence of thymic hyperplasia except to the extent that this condition is more frequent in the male. During the study of the 100 chest films, it was possible to tell the sex of the infant, with only an occasional error, by the contour of the chest wall, the boys generally showing a fuller and larger chest than the girls.

That no grounds exist for calling a fat, chubby infant a "thymus baby" is shown by the study of the weights and lengths. The average weight for the entire group was 6.7 pounds (3.04 kg.). The average weight of the fifty-two infants with thymic hypertrophy was 6.8 pounds (3.08 kg.), and those with a negative thymus showed an average weight of 6.6 pounds (2.99 kg.). Certainly the variation in weight is so slight as to render this a negligible factor, at least in the new-born. The lengths of the infants showed the same slight variation, the average for this group being 49.2 cm. Those with thymic hypertrophy averaged 49.7 cm., and those with negative thymus, 49 cm.

MATURITY OF THE INFANTS

Fenger,[5] in his studies of the thymus in animals, concludes that the thymus is therapeutically active at least

5. Fenger: J. Biol. Chem. **20**: 715, 1915.

three months before fetal maturity. If this holds in the human being, one might anticipate finding the thymus fully developed before term. This is not borne out by our findings. Thus, thirteen of the 120 infants were born between the eighth and ninth months, and one between the seventh and eighth months. Only five of the fourteen premature infants, or 35 per cent., revealed thymic hyperplasia. Forty-seven of the 105 term infants, or 44 per cent., showed the same. While the group studied was small, the evidence does not indicate a greater tendency to thymic hyperplasia in

TABLE 4.—*Relation of Symptoms to Thymic Hyperplasia*

Symptoms	Number of Cases	Infants Showing Thymic Hyperplasia	Infants Showing Negative Thymus
Respiratory delay	13	6	7
Cyanosis	4	3	1
Marked regurgitation	2	1	1
Listlessness	1	1	..

premature infants. Apparently, the thymus reaches its largest size after birth. Clinical observations seem to bear this out, since thymic symptoms are apparently more common in young children than in the premature or new-born.

EARLY SYMPTOMS

It is well known that, in many infants, the enlarged thymus glands run an entirely symptomless course. Some infants show symptoms later in infancy or in childhood. The symptoms may vary greatly in severity. Dyspnea, stridor with cyanosis, or convulsions may be present. Milder symptoms, such as inspiratory stridor, or other disturbances suggestive of thymic hyperplasia, may be exhibited. In any group of infants showing 43 per cent, with thymic hyperplasia, one would expect a certain number showing symptoms indicative of this condition. In order to understand fully and appreciate the data obtained in this series, a word of explanation is necessary. Any infant in this group revealing a hyperplastic thymus was immediately treated by the roentgen ray. Since all infants were studied within the first twenty-four to thirty-six hours of life, this means that no infant revealing an abnormally enlarged thymus was permitted to go longer than from twenty-four to thirty-six hours untreated. It is necessary to bear this in mind in considering the data presented. In none of the 120 cases were any symptoms attributable to the thymus noted after the second day of life. Not one of the fifty-two infants with thymic hypertrophy revealed stridor, attacks of suffocation or convulsions after being treated, at least not during their stay in the clinic, which was approximately six weeks for the illegitimate, and two weeks for the legitimate infants. Twenty of the infants studied, however, showed some symptoms during the first two days. The symptoms, and distribution in relation to thymic hyperplasia are shown in Table 4.

Special attention was paid to respiratory delay, which was defined as failure to breathe within one minute or more after birth. This symptom occurred in thirteen, or approximately 11 per cent. In six of this number, there was definite thymic hyperplasia, while in seven there was no evidence of abnormal thymus. Of the six showing respiratory delay and thymic hyperplasia, one baby had been delivered by cesarean section, and two by low forceps. Three were normal deliveries. It is impossible to state what part, if any, of this respiratory delay was caused by the thymus. Respiratory delay is not uncommon following cesarean or forceps deliveries, or even in normal spontaneous births. Of the other group in which this symptom was displayed but no thymic hyperplasia found, four had been delivered normally, one was a spontaneous delivery, but was persistently in the occipitoposterior position, one had been delivered by cesarean section, and one by version and extraction. From these somewhat limited observations, it is apparent that thymic hyperplasia cannot be considered an important factor in respiratory delay of the new-born. In 23 per cent. of the cases in which this symptom existed, an enlarged thymus was the one finding, while in another 23 per cent., the thymus may have been indirectly responsible. This, however, does not help us account for the 54 per cent. that occurred in infants with no thymic hyperplasia.

Four infants displayed marked cyanosis or cyanotic attacks during the first day. All of these had definitely enlarged thymus glands. In none could any evidence of syphilis or congenital heart disease be found. Apparently the thymus was largely responsible for the condition.

One infant with an enlarged thymus showed marked difficulty in nursing, and had repeated attacks of severe regurgitation during the first twenty-four hours. This is mentioned, since it may be indicative of the close relation existing between pyloric stenosis and the thymus. This relationship has been pointed out by Friedlander[6] and also Pitfield.[7] A similar case was observed by one of us in a private patient not included in this series.

One infant with a large thymus was listless and weak. This was a term baby and revealed no evidence of any pathologic condition, except for the thymic enlargement. No severe symptoms were noted in any of the fifty-two infants with thymic hyperplasia. The early diagnosis and immediate treatment with the roentgen ray are held largely responsible for the absence of serious symptoms.

DEATHS IN THE SERIES

In studying the deaths in the series, it is necessary to recall that all infants showing enlarged thymus glands were immediately treated by the roentgen ray. It is also to be noted that, during this study, the clinic suffered from a pneumonia epidemic. Any value from the roentgen-ray treatment of cases showing hyperplasia would be indicated by the cessation or lack of symptoms and deaths from thymic causes. Five deaths were noted in the series during the time covered by this study. No data are available concerning the infants after they left the clinic. These deaths occurred in the interval from birth to the seventeenth day. All the infants who died were examined post mortem. The roentgen-ray and pathologic findings, so far as the thymus was concerned, coincided exactly. In two cases, the diagnosis of enlarged thymus was made during life and at necropsy.

TABLE 5.—*Causes of Death in Five Infants*

Cause of Death	Number of Cases	Enlarged Thymus	Thymus Negative	Thymus Enlarged at Necropsy	Thymus Negative at Necropsy
Pneumonia	3	2	1	2	1
Acute encephalitis	1	..	1	..	1
Prematurity and congenital heart	1	..	1	..	1

6. Friedlander, A.: Tr. Am. Pediat. Soc., 1917.
7. Pitfield, R. L.: Pediatrics **29**: 188, 1917.

Table 5 shows the causes of death and the distribution of thymic enlargement in these cases.

The mortality rate in the series was 4.1 per cent. The three deaths due to epidemic pneumonia should be considered in studying this death rate.

While none of the deaths were attributed directly to the thymus by the pathologist, it would be a matter of considerable interest to know the part played by enlarged thymus glands in two of the pneumonia deaths. The fact that no deaths were due directly to the thymus speaks well for the therapeutic value of the roentgen ray. A question may be raised, however, concerning the death rate in a similar group of infants, but with untreated thymic enlargement: Would such a study reveal any material difference in the mortality rate? In such a comparison, it must be remembered that statistics on deaths from untreated thymic hypertrophy occurring later in infancy are not available. Everyday experience, however, makes it reasonable to assume that such deaths might have occurred. The actual value later in life of early treatment in these cases of enlarged thymus cannot be accurately stated; certainly, potential dangers from this source would appear to a great extent eliminated.

A comparison of the mortality rate in the foregoing series with the death rate in a similar but untreated series of 120 consecutive infants was made. In the series of untreated cases, there were seven deaths, or a mortality of 5.8 per cent. Unfortunately, only one of this number, an infant dying on the ninth day, came to necropsy. The cause of death as shown by necropsy was suffocation due to thymic hyperplasia. Three of the remaining group had death certificates with asphyxia and prematurity named as the cause of death. It is impossible to say whether any of the three had enlarged thymus glands, but the asphyxia might well have been due to an undiagnosed thymic hyperplasia. One of the group died of hydrocephalus and spina bifida, one of pneumonia, and one of intracranial hemorrhage. It is to be regretted that only one of the seven was examined at necropsy. It would seem that at least one of this group could have been saved, had an early diagnosis been made and treatment instituted. How many of the others could have been saved by the same procedure will remain undetermined.

The actual difference in the death rate of the two groups was 17 per cent. With due allowance for the deaths due to epidemic pneumonia in the first series, the death rate would be approximately one-half that of the latter group. The fact alone, however, that there were no thymic deaths in the first series, but at least one and possibly more in the second series, is sufficient evidence to convince even the most skeptical of the value of early diagnosis and treatment of enlarged thymus by the roentgen ray.

If the familiar dictum, "An ounce of prevention is worth a pound of cure," is true, it is apparent that all infants with hyperplasia of the thymus should be treated early by the roentgen-ray. This procedure has already been adopted in some hospitals.

In hospital practice, the roentgen-ray examination of all new-born infants might be advisable. Adoption of routine treatment for those showing thymic hypertrophy should, however, be undertaken with the knowledge that by no means all infants with this condition develop symptoms. Many with enlarged thymus glands have an entirely symptomless course. Others develop symptoms later in infancy or childhood, with the result that some die suddenly from relatively mild trauma or shock.

It is impossible to tell which infants with abnormally enlarged thymus glands are going to suffer from this course. Only by the routine treatment of all such cases can such dangers be entirely obliterated. Such routine procedure properly falls in the category of preventive medicine, and, as such, has an important place in modern therapeutics.

The adoption of such procedures in general practice seems doubtful. Roentgen-ray laboratories are not always convenient or available, and the urgency is generally lacking unless symptoms are displayed by the infant. More careful observation for subjective or objective evidence of thymic hyperplasia would be of considerable value. When such evidence is found, verification by means of the roentgen ray should be advocated, and proper treatment instituted.

Roentgen-ray therapy for hypertrophy of the thymus seems to be fairly well standardized. The technic used by the department of roentgenography of the University of Michigan may be briefly stated as follows: The focal distance is 12 inches. A 3 millimeter aluminum filter is interposed, with an exposure between two and three minutes. This dose is less than one-half an erythemic dose. Three treatments are given, one week apart.

CONCLUSIONS

1. Abnormally enlarged thymus is common in the new-born, occurring in from 40 to 50 per cent. of such infants.

2. In general, few symptoms indicative of thymic hyperplasia are apparent the first day of life. When these occur, they are generally mild.

3. A tendency to higher rate of thymic hyperplasia is noted in infants born of elderly mothers and of multiparas, in male infants and in infants born at term.

4. No appreciable difference in size or in weight exists between infants showing thymic hyperplasia and those with a negative thymus.

5. There is a definite fluctuation in the size of the thymus synchronous with respiration.

6. From a diagnostic standpoint, the roentgen ray is superior to clinical methods, in arriving at an estimation of the size of the thymus.

7. While it may be impracticable outside a hospital to subject every new-born infant to the roentgen ray, it is absolutely essential that every baby with thymic symptoms be so treated.

8. Stereoscopic films of the chest taken at the end of expiration are of more practical value than fluoroscopic observations.

9. Potential dangers from hyperplasia of the thymus may be eliminated by early diagnosis and roentgen-ray treatment.

Indifference to Venereal Disease in Siam.—The almost complete indifference the average native exhibits to venereal infection is difficult for one who has never worked in the East to image. It is hardly exaggerating when it is stated that the low class individual is concerned only with his enforced period of continence during the very acute stage of his disease. To instil a healthy fear of the plague by dwelling on the consequences is productive of only limited results in the most enlightened countries, and in the East the results are less than nil; it seems a positive waste of time to work along that line with the bulk of the people.—R. W. Mendelson: *Am. J. Pub. Health* **13**:828 (Oct.) 1923.

NONSYPHILITIC PSYCHOSES IN SYPHILITIC PATIENTS*

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Blessed as is the Wassermann test, its results are not unmixed with evil. Through it, every one, no matter how indifferently equipped with medical knowledge, is given a means of diagnosis approaching necromancy, and because of it, detailed history taking, careful study of symptoms and painstaking physical examination seemingly have lost much of their importance. It sometimes appears as if the only necessary diagnostic step is to make a Wassermann test, and, if it is found positive, lo! the cause of the disease is discovered and all that is needed is to administer arsphenamin, with recovery just around the corner. Through the Wassermann test, many previously obscure disorders were solved and syphilis came etiologically more than into its own. Thus, it is not uncommon for a patient suffering, for example, from cardiac disease to give a positive Wassermann reaction, with the result that, regardless of its general characteristics and history, the heart disease is ascribed to syphilis, which overshadows all other factors. As men are everywhere on the lookout for easy methods of diagnosis and sure cure therapy, it is not surprising that syphilis, whenever and wherever found, is regarded as the cause of the particular symptoms of which a patient at a given moment complains.

Nowhere is such practice more common and less warranted than in psychiatry. It has been demonstrated that 100 per cent. of all patients with general paralysis are syphilitic, and it is inevitable that many will deduce that every psychotic patient who is syphilitic owes his psychosis to syphilis. Nothing is further from the truth. A person with a faulty nervous system may break down from a multitude of causes, physical or mental, acting singly or in combination; but if such a person, presenting from one to a dozen possible causes, gives a positive Wassermann reaction, all of them will usually be ignored except syphilis. The interpretation of all the consequences of syphilis, be they neurologic, cardiovascular, dermatologic or otherwise, has been tremendously influenced by syphilologists who sometimes appear to lack correlated training in broader fields of medicine yet whose views on syphilis have been accepted by many physicians as authoritative and final. As a result, many psychotic patients who are syphilitic are receiving treatment from those to whom syphilis appears as the paramount, if not the sole, etiologic factor, and many other such patients are having their psychiatric disorders diagnosed as general paralysis and are being committed to state hospitals, without trained psychiatric investigation and treatment, on the theory that they are hopeless and it makes no difference what is done with them. Fortunately, after the patient's arrival in most state hospitals, differential diagnosis is better made.

SYPHILIS THAT IS INCIDENTAL TO PSYCHOSES

The fact that one is mentally defective is no reason why one cannot contract syphilis or any other disorder. There is reason to assume that those who are subnormal are as likely to acquire syphilis as are normal persons, and less able to care for it. While syphilis in any person, sane or insane, should receive treatment, it must be correctly evaluated. It is futile to expect a patient with dementia praecox or paranoia, who is also syphilitic, to recover from his psychosis through the use of arsphenamin and mercury, and it is important to distinguish between those psychoses in syphilitic persons that are due to syphilis, and those psychoses in syphilitic persons that have no relation, except an adventitious one, to this infection.

In the preparation of this paper, an attempt was made to obtain statistics from state hospitals on the frequency of syphilis in patients in whom this infection was supposed to be incidental, but without much success. Statistics on the frequency of syphilis in psychiatric cases are plentiful, but the distinction between syphilis as a cause and syphilis as an incident apparently has not been worked out in widespread fashion. Dr. R. L. Leak,[1] superintendent of the Connecticut State Hospital, provided the best statistics. In this hospital, during 1923, 418 new patients were tested for syphilis. The men gave positive Wassermann reactions in 17.51 per cent., and the women in 4.96 per cent. of the cases. Approximately 70 per cent. of both men and women with positive blood reactions also gave positive spinal fluid reactions, and are considered by him to have general paralysis. The remaining 30 per cent. gave negative spinal fluid reactions, and are considered by him as having syphilis which is incidental. It may be assumed that statistics would work out about the same if applied to larger groups, though different observers might place widely varying constructions on the importance of syphilis as a causal factor. It is reasonable to assume that syphilis occurs as a complication in insane patients in the same proportion as syphilis exists in mentally sound persons. If 5 per cent., or whatever the percentage may be, of the general population are syphilitic, then a similar percentage of the insane population will probably be incidentally syphilitic, exclusive of those whose insanities are entirely due to syphilis.

No form of psychosis or psychoneurosis is exempt from the possibility of complication by syphilis, and it may be well to dwell for a moment on illustrative types.

SPASMODIC NEUROSES AND PSYCHONEUROSES

Epilepsy.—The person who has a convulsion and whose blood is Wassermann positive usually has his disorder diagnosed as "syphilitic convulsion." But a considerable percentage of epileptic patients contract syphilis, and sometimes syphilitic patients become epileptic without regard to the presence or absence of syphilis. Occasionally, a patient who has had cerebral syphilis develops epilepsy as a result of a healed lesion; though as a rule the convulsion that is syphilitic in origin is apoplectiform and is accompanied by, or leaves, paralytic phenomena. Yet patients are constantly referred to the neurologist with a diagnosis of "syphilitic epilepsy," and there is repeated search for syphilis in most epileptic patients who make the rounds. Differential diagnosis between the epileptic convulsion and the convulsion due to syphilis is usually not difficult, and on differentiation will depend prognosis and the more immediate problems of treatment and custodial care. In every patient who has convulsions, and in whom syphilis is found, an effort should be made to obtain an accurate history of the chronological order of convulsions and the earliest manifestation of syphilis, and the type of convulsion should be studied before differential diagnosis is made.

* Read before the Section on Nervous and Mental Diseases at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. Leak, R. L.: Personal communication to the author.

Psychoneurasthenia.—The psychoneurasthenic person who contracts syphilis may present a puzzling problem. He may be expected, through worry, to develop mental symptoms which may pass over the borderland into manic-depressive insanity which, in turn, may be hard to differentiate from early general paralysis. Starr and other authorities urge that care should be taken to differentiate between neurasthenia and incipient general paralysis. The emphasis, probably quite unintentionally, appears to be on the danger of diagnosing neurasthenia when general paralysis is present, and allowing the patient to continue the conduct of his business and social affairs with disaster in prospect. This mistake is not as serious as is the opposite one, that of classifying neurasthenia as general paralysis, and depriving a patient who is not dangerously ill of the hopeful prognosis and the opportunity to work that are justified by psychoneurasthenia. It may be said that, if a syphilitic person is neurasthenic, syphilis is probably the cause; but it is equally true that a patient who is already neurasthenic and who contracts syphilis, which is improperly thought to have caused organic changes in the brain, may, through worry, develop manic-depressive insanity which could have been avoided by correct appraisal and treatment.

THE PSYCHOSES

Any psychosis may be complicated by syphilis; and, depending on the relationship of the two disorders, will be found much of prognostic and therapeutic value. Even though syphilis induces a psychosis through worry, it is not sufficient to make it the sole or even the important etiologic factor; for the patient who becomes insane from worry over syphilis would probably become insane from worry over any other serious mishap. If such a patient can be persuaded that he never had syphilis, even though it be present at the moment (a proposition that is not advocated but is stated only for speculative purposes), he will often recover his mental poise. And with this reservation as to the influence of syphilis in etiology through the production of worry, one may consider it as a possible complication in practically any form of psychosis.

Dementia Praecox.—Many psychopathic persons contract syphilis, and develop dementia praecox, which may have been latent or incipient at the time of the infection. When the Wassermann test reveals syphilis, differential diagnosis may become difficult. Such patients may exhibit manic-depressive, hebephrenic or paranoid symptoms, associated with characteristic physical changes of dementia praecox, which may suggest organic brain syphilis, and thereby prove confusing.

A traveling salesman, aged 23, with a definite history of syphilitic infection at 19, became confused in his business affairs. He had many of the physical stigmas of dementia praecox, including faulty development of the ears, and acrocyanosis associated with increased knee jerks. He annoyed other patients, neglected his appearance, was silly and careless, and there was about him a strong suggestion of the stupor so often seen in pre-general paralytic patients. Clearly these phenomena might easily have been mistaken, as they were mistaken, for early general paralysis. This patient was seen in pre-Wassermann days, and blood and spinal fluid tests were not available, nor was antisyphilitic treatment administered. After three months' rest, he was discharged with the confident expectation that he would soon be returned. Twelve years later, in 1920, he continued traveling, was doing fairly well, and had never suffered a relapse. He still had a silly grin and many mannerisms and peculiarities, and, without knowledge of his past history, almost any psychiatrist would have regarded him at a glance as partially demented.

This case was a typical one of dementia praecox, in which syphilis had little bearing, except as it may have been an additional obstacle for a person already in poor mental condition to overcome.

Manic-Depressive Insanity.—A certain percentage of persons develop manic-depressive insanity under stress. Such persons, if already syphilitic, find their resistance lowered, and to that extent syphilis may be regarded as a contributing factor; but many patients with a combination of manic-depressive insanity and syphilis recover their minds without antisyphilitic treatment, and prognosis becomes the prognosis of manic-depressive insanity rather than of syphilis.

A clerk, aged 22, gave a history of syphilis of three years' duration. He talked incessantly and incoherently, slept little, and his thoughts changed with almost lightning speed. He had many grandiose delusions. By means of buttons connected with electric batteries, on awaking in the morning, he could, by the pressure of a finger, start the furnace fire, put the coffee on the stove, sweep the floors, raise the window shades to any desired level, stop or start rain, and cause the wind to blow or cease to blow. He believed himself of great strength and beauty, and declared himself to be a prince, the son of a king. A number of psychiatrists expressed the opinion that he had general paralysis. This occurred in pre-Wassermann days, and blood and spinal fluid tests were not available, nor was antisyphilitic treatment used. He was removed to a state hospital, from which he was discharged two months later. He returned to his business, which he pursued uneventfully over a known period of ten years without recurrence.

The detailed history in this case indicates that the patient worried because syphilis prevented him from marrying, and the result indicates that the disease was clearly manic-depressive insanity.

Paranoia.—Cases of paranoia complicated by syphilis are most interesting, since they present more subtle difficulties than those previously described.

A man, aged 45, a member of an unusually psychopathic family, has unmistakable physical evidences of syphilis. Repeated Wassermann tests have been positive, and he has received vigorous antisyphilitic treatment. He does not worry over this infection, but for several years has made the rounds of medical offices, seeking advice for his mental disorder. He believes that he is the victim of a conspiracy, the purpose of which is to drive him and others insane. He has had many adventures and escapades, some of which have been amusing and others disastrous. Meanwhile, and notwithstanding his delusions, he has succeeded in business. His mental disorder has been diagnosed a dozen or more times by physicians as general paralysis, yet he lives on and shows no physical symptoms suggesting that disorder.

A man, aged 56, who had held many important positions, had syphilis in youth, for which he was ably treated. When about 50 years of age, he had cataracts removed from both eyes, and to protect them he wore dark glasses and pulled his hat down over his face. He dressed oddly and wore his hair and beard in peculiar fashion; at all times as he walked along the street, people would turn and look at him. He was unhappy, irascible and quarrelsome. One day he became greatly excited at a member of his family over a petty argument, which took place between them while in a theater. The quarrel continued at home, and he threatened members of his family with a knife. The whole picture was that of a patient with excitement from early general paralysis. The eye condition prevented tests for inequalities, but the tongue was tremulous, and the knee jerks were increased. The blood and spinal fluid were Wassermann negative, and the latter had a cell count of but 1 per cubic millimeter. He was committed to a state hospital (in 1917) where, notwithstanding the negative tests, the members of the staff regarded him as probably having general paralysis. He was released after a

few months, and is at present engaged in business. Letters from him of recent date show that his very peculiar views on life remain unchanged.

Both preceding cases are so obviously paranoiac that at the present time no one questions this diagnosis; yet for many years, and by many physicians, both were thought to be cases of general paralysis.

Sometimes developmental psychic disorders are complicated by syphilis in such a way as to make it seem that a patient who has paranoia has also general paralysis. In such a case it might be difficult to tell where syphilis begins and paranoia leaves off, or the reverse.

A real estate dealer, aged 48, advertised in an extravagant and unusual manner. He quarreled with many people, thought himself persecuted, and was litigious. He abused people over the telephone, and was arrested, examined and, after two trials, committed to a hospital. He had been in a state hospital for eleven days in 1912 and fourteen days in 1917. The last commitment took place in 1920, and he was restrained about three months. Here his trouble was regarded as recurrent manic-depressive insanity. At present (1924) he is confined to his home, is losing his sight, has pupillary inequalities, and shows abundant evidences of organic cerebral changes. Recent investigation shows that he has always been peculiar, and that he has shown paranoidal tendencies from early boyhood. His family recognizes that in youth he had a venereal infection, but because of his strenuous objection he has never had blood or spinal fluid tests. Since he became demented, he has not been under medical care.

In view of the final developments, it seems that this patient now has general paralysis, and one need not stretch one's imagination to assume that this is a case of manic-depressive insanity, or paranoia with manic-depressive episodes, in which superadded syphilis has terminated in general paralysis. Or course, it is possible that, from the beginning, this was a case of cerebral syphilis with remissions; but an examination of the complete history of the case leads to the assumption that this man is the victim of multiple psychoses.

CONCLUSIONS

1. Syphilis may exist in association with a psychosis either as cause or as complication. When found in such association, it should mean merely the beginning of further investigation, and it is important that, through painstaking history, its relation to the psychoses shall be correctly evaluated.

2. The distinction between syphilis as a cause, and syphilis as an incident or complication, should be worked out in every case, not only for diagnostic reasons but also for therapeutic, prognostic and custodial reasons.

3. Such differentiation is frequently required in cases of epilepsy, neurasthenia, dementia praecox, manic-depressive insanity and paranoia.

4. It is possible for a patient to have an unrelated psychosis, such as paranoia or manic-depressive insanity, and afterward to develop general paralysis. In rare instances, multiple psychoses, for instance paranoia and general paralysis, may be coincidentally present.

5. In any psychosis in which syphilis is incidentally associated, the prognosis is that of the psychosis rather than of the complicating syphilis.

6. Nothing here stated should be construed as an argument against antisyphilitic treatment in any case of syphilis, regardless of its relation to the coincident mental disorder.

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ABSTRACT OF DISCUSSION

DR. WALTER F. SCHALLER, San Francisco: In my records there are six cases of head injury in syphilitic patients, followed by a psychosis. They ran a course which has appeared to me to be rather typical of severe head injury with mental symptoms; viz., a confusional psychosis with delusions and hallucinosis, and often complete disorientation, but with a good prognosis for ultimate recovery. One of these cases was a frank neurosyphilis, evidenced by positive serologic reactions as well as definite physical symptoms. Another case showed a positive blood Wassermann reaction. Both patients recovered from their psychoses. The period of recovery in this series of both syphilitic and nonsyphilitic patients, lasted from a few weeks to ten months. This subject has an important bearing in the matter of industrial compensation. None of the patients in this series developed a syndrome of a post-traumatic neurosis after recovery from the psychosis.

DR. C. G. WHOLEY, Pittsburgh: Psychiatrists must appreciate the importance of the ideas brought out in this paper. We are all familiar with the hysteroneurasthenic syndromes seen in states of exhaustion and conditions of infection. Under certain circumstances, more pronounced psychotic effects may be seen, as when praecox or manic-depressive episodes are precipitated during or after pneumonia, typhoid or the puerperium. Such nervous and mental manifestations indicate a predisposition in certain individuals to react in a more or less specific psychotic manner to infections and to exhaustive states. On removal of the infection, the neurasthenic or psychotic symptoms usually disappear, often reappearing in identical fashion under conditions similar to those under which the psychosis was originally brought out. A familiar instance of this recurs to us all when we recall puerperal cases with or without infection, in which praecox or other such manifestations have occurred with each pregnancy. Such manifestations have evidently been functional in character and are expressive of reaction pattern paths peculiar to the individual effected. As Dr. House has so clearly shown, it is most important to bear such facts in mind in relation to syphilis, especially in connection with general paralysis. I am convinced that many persons experience long periods of a hysteroneurasthenic or other psychotic disturbance as a functional reaction to the poison of syphilis who would not pass into the organic changes constituting general paralysis if the provoking agent were earlier recognized and treated. The same conclusion is true to a less extent with the manifestations of the graver psychoses.

DR. JULIUS GRINKER, Chicago: We must constantly bear in mind that a patient may be syphilitic—show the signs and evidences of syphilis—and in addition exhibit marked symptoms of a psychosis or neurosis, either superadded, or existing prior to the acquisition of syphilis. Those cases are not so rare. A number of years ago I saw a leading psychiatrist exhibit a patient who looked and acted like a person with general paralysis, and yet he proved to be a true paranoiac —the syphilis existing side by side with paranoia. I have seen a nonsyphilitic psychosis in a man who developed parenchymatous syphilis later. The patient suffered from a typical case of dementia praecox and with none of the signs of syphilis present. All the laboratory tests were negative. Ten years later the patient entered my office with a well developed case of general paralysis. At present I have a case of nonspecific psychosis under observation—the patient has syphilis without a doubt. He received proper treatment, and the Wassermann reaction became negative. There are no clinical symptoms of syphilis, but the patient is now suffering from a psychosis of the schizophrenic reaction type that cannot be mistaken for anything else. Is this syphilitic? It is not, because clinical signs are absent and the serologic reactions are negative. For purposes of treatment, therefore, we must differentiate manic-depressive states, dementia praecox, paranoia and the neuroses from true syphilis of the nervous system.

DR. WILLIAM A. JONES, Minneapolis: The point that impressed me most in Dr. House's paper was the necessity of

getting at the fundamentals through study of the biologic and hereditary tendencies of the individual. That would simplify the future diagnosis of the individual. Whether he has syphilis with paranoia or manic-depressive insanity is probably with him a certainty, and the treatment for such conditions is almost invariably unsuccessful. If the patient is in bad condition fundamentally, he remains so even in spite of his seeming recovery from his syphilis. He may at last get to a point at which he is functionally able to get about, and, as I have observed these cases, he will show a reduction of some kind that is more or less continuous; but from a biologic and hereditary standpoint the fundamentals are already established.

Dr. Lesser Kauffman, Buffalo: I have under observation a man who recovered from a mild case of influenza two years ago. His physician permitted him to resume his work, and about a week later the man practically went to pieces. I put him under treatment and he recovered from his psychoneurosis, resumed his occupation, and when working he apparently got on fairly well. The blood Wassermann reaction was negative. Last November he was somewhat depressed, and complained of having a rash. He had a few papules on the right upper and left lower extremities. He stated that he did not have infection. The blood Wassermann reaction was negative. About six weeks ago he had quite an extensive rash. The blood Wassermann reaction was negative. A specialist in syphilology, who made a blood Wassermann test at my request, reported that the patient had syphilis. Here apparently is a patient who was a distinct psychoneurotic with a negative blood Wassermann reaction taken nine times and a negative cerebrospinal fluid, yet it was definitely shown that he had syphilis.

Dr. Karl A. Menninger, Topeka, Kan.: As to the point made by Dr. House that we take the Wassermann test too seriously, that the importance of suspecting syphilis is often overstressed, I think we are very likely to lean over backward. With the nucleus of his paper, i. e., the emphasis on the importance of a more careful history of the patient and of his entire family, I strongly agree. But the results of this will, I believe, tend to the finding of syphilis more frequently rather than less frequently, and the negative Wassermann reaction in connection with syphilis more frequently than the positive Wassermann reaction without syphilis. It is important to remember that often syphilis is not recognized, that it appears in vague forms, and that it is probably more often overlooked than overstressed.

Dr. Richard Dewey, Los Angeles: The importance of greater discrimination in the diagnosis of cases of general paralysis and other psychoneuroses cannot be overemphasized. For many years it has been impressed on me that the average neurologist is almost too ready to make the diagnosis of general paralysis, and that many cases of purely functional disease are attributed to syphilis when that is not the case. We must bear in mind that syphilis may be present and yet may not be the cause of the psychosis.

Dr. William House, Portland, Ore: I heartily agree with Dr. Menninger that the importance of syphilis in etiology must not be overlooked, and if there is a choice between errors it is better to overestimate than to underestimate. But neither of these errors is necessary. Unfortunately, the treatment of neurosyphilis at present is passing out of the control of neurologists, and there is arising a host of syphilologists who, on laboratory findings principally, are treating all the manifestations of syphilis, from falling of the hair to plantar desquamation and all of the organs in between. In some cases we have reason to believe that psychiatric elements and many times important neurologic elements are overlooked, and that the etiologic aspects of syphilis in relation to such elements are not always correctly appraised. My aim in presenting this paper is to point out that syphilis often exists purely as a complication of other diseases, especially of psychiatric diseases, and it is the duty of members of this section as far as is possible to set the profession right in this matter.

SEROLOGIC AND CLINICAL RESULTS IN VARIOUS TYPES OF SYPHILIS

WITH SULPHARSPHENAMIN ADMINISTERED INTRAMUSCULARLY *

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Sulpharsphenamin, a sulphurous acid ester of arsphenamin differing slightly from neo-arsphenamin in structural formula and containing from 22 to 24 per cent. arsenic instead of from 18 to 20 per cent., has been in use in the treatment of syphilis in European clinics for several years. Voegtlin [1] and his associates, in studies carried on in the Hygienic Laboratory, have apparently shown that the drug is more stable than neo-arsphenamin, both in powder and in solution; that it is therapeutically equal to neo-arsphenamin, but of a much lower toxicity; that it is eliminated as rapidly by intramuscular as by intravenous injection; that it has a greater ultimate sterlizing power than neo-arsphenamin, and that its chemotherapeutic index (ratio of toxicity to parasiticidal value) is equal to that of arsphenamin itself. The drug in from 30 to 40 per cent. solution (0.4 gm. in from 1.2 c.c. to 1.5 c.c. of distilled water) can be injected subcutaneously or intramuscularly in adults, without excessive irritation. A subcutaneous injection of a 30 to 40 per cent. solution is tolerated by children. The ease of administration by these routes is an immense advantage, from the standpoint of availability, for the treatment of syphilis by the practitioner. According to the observations of Ehrlich [2] himself, of Wechselmann and Eicke,[3] of Harrison, White and Mills [4] in the British army, of Craig,[5] Sutton [6] and Fordyce and Rosen,[7] intramuscular injection is particularly effective in its action on the disease itself.

Voegtlin, Smith, Dyer and Thompson,[8] by the ingenious device of infecting locally with trypanosomes the cranial subarachnoid space of rabbits, succeeded in showing that the penetration of the nervous system secured with sulpharsphenamin administered by the blood stream was superior to that obtained with neo-arsphenamin and arsphenamin, and comparable to that secured with tryparsamide, which has the highest penetration of any arsenical yet devised.

The experience of Lévy-Bing, Lehnhoff-Wyld and Gerbay,[9] who first described the drug from the clinical

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standpoint, and the subsequent reports of Bernard,[10] Yernaux and Bernard,[11] Emery and Morin,[12] Hewins and Acre,[13] Doble,[14] Irgang,[15] Mills[16] and Boone and Weech,[17] aggregating approximately 550 cases and 5,000 injections, has indicated that chancres and secondary eruptions involute rapidly under sulpharsenol (identical with sulpharsphenamin); that the spirillicidal effect is rapid by intramuscular injection, but slower by subcutaneous injection, and that the general therapeutic effect and action on the Wassermann reaction ranges between that of neo-arsphenamin and arsphenamin, being in general at least the equal of the latter. European observers have found the toxicity of the drug to be low, no serious local or systemic toxic reactions being reported by either intramuscular or intravenous routes. Slight local pain, radiating down the leg, may be caused by intramuscular injection occasionally, and Doble reports slight Herxheimer flare-ups in syphilitic lesions. Belding,[18] using a different preparation from that which we or the foregoing observers have employed, and in a more distinctly cumulative dosage with shorter time intervals, reports 16 per cent. of toxic dermatitis in sixty-three cases, and 36 per cent. of what he regards as mild peripheral neuritis. His results are somewhat at variance with our experience.

At the suggestion of Professor Voegtlin, we undertook, fourteen months ago, a clinical study of this drug, emphasizing its intramuscular use at the outset, and of late its applicability to the treatment of neurosyphilis. The present report includes 126 patients with all types of syphilis who received intramuscularly 1,360 injections, ranging from 0.3 to 0.6 gm. each. Careful protocols of spirillicidal effect were kept on the primary and secondary cases. The Wassermann reactions were done by the Kolmer technic, which considerable experience has convinced us is the most sensitive and trustworthy method now available. We studied especially the local reactions induced by the drug at the site of injection, and the effect on the working capacity of the patient; the spirillicidal effect and rate of healing in early lesions; the effect on the blood Wassermann reaction, and on relapse and neurorecurrence, clinical and serologic; the response of the blood Wassermann reaction in latent syphilis, mainly untreated; the effect of the drug in neurosyphilis when used intramuscularly, with especial reference to the blood Wassermann and spinal fluid changes; the effect on gummatous late lesions and the blood Wassermann reaction in such cases; the effect of the drug in cardiovascular syphilis, and the effect of the drug on patients who had received at our hands large amounts of previous treatment with other forms of arsphenamin without effect on the blood and the spinal fluid. During the course of these observations, we studied the reaction of patients to mercurial treatment by inunction and by intramuscular injection given simultaneously with intramuscular sulpharsphenamin; the ability of patients previously intolerant of other arsphenamins to take sulpharsphenamin intramuscularly without ill effect, and the incidence of all forms of toxic reaction to the drug. The results of our observations may be summarized briefly as follows:

LOCAL REACTION

Sulpharsphenamin of the brand we have been using can be injected by a careful technic ("epifascial" technic described by Stokes[19]) practically without significant local reaction, and with no more discomfort than attends the ordinary mercurial injection intramuscularly. Doses over 0.4 gm. should be divided between the two buttocks. We believe subcutaneous injection to be less effective therapeutically, and do not advise it. Even with the inclusion of the most trifling reactions, such as a stinging sensation, no local discomfort whatever occurred in 83 per cent. of the 1,360 injections. Two objectively visible reactions developed, one an infiltrated plaque, which subsided under hot applications, and the other a sterile abscess, which caused no symptoms and which the patient did not know was there. Emphasis should be placed on using a 30 to 40 per cent. solution; on complete emptying of the 2 c.c. syringe by having a small bubble of air above the injection fluid to clear the needle, and on the use of a correct epifascial technic. Twenty-nine patients followed occupations calling for active physical work, and none were inconvenienced. Only one patient was transferred to other treatment because of a local reaction.

SPIRILLICIDAL AND HEALING EFFECT IN EARLY LESIONS

Seven primary lesions and four patients with mucous patches were studied. *Spirochaeta pallida* disappeared from these lesions within ten hours, and in several cases within seven hours after the administration of 0.4 gm. of sulpharsphenamin, intramuscularly; this is more rapid than is usual with neo-arsphenamin. The healing of chancres was accomplished within from seven to ten days; the entire disappearance of maculopapular secondary eruptions with mucous patches took place within from three to nine days, averaging six days, which compares favorably with arsphenamin itself. A typical course in a case of primary syphilis is reported herewith.

REPORT OF CASE

The patient was examined, March 6, 1923, and a chancre was found, about 2 cm. in diameter, just above the posterior fourchet, right labium minus, and extending into the sulcus between the labia. The dark field swarmed with typical *Spirochaetae pallidae*, which were actively motile at 3:40. The Wassermann reaction was 4+. The results of treatment may be briefly summarized as follows:

3/6/23

3:45 p. m. Sulpharsphenamin (Squibb), 0.4 gm., was given, intramuscularly, in the right gluteal muscle; there was no local reaction or discomfort.

4:45 p. m. A second dark-field examination revealed no change in numbers or motility of *Spirochaeta pallida*.

5:45 p. m. A third dark-field examination revealed no change; there were still about the same number of actively motile organisms.

7:45 p. m. The fourth dark-field examination was made after a lapse of two hours, because of the patient's discomfort. In this smear, five hours after treatment, the number of organisms was definitely reduced in numbers for each field, and their motility was questionably reduced.

10. Bernard, R.: Le sulfarsénol, Scalpe **19**, October, 1919.
11. Yernaux, M. M., and Bernard, R.: Contribution au traitement de la syphilis par le sulfarsénol, Scalpel **24**: 593, 1919.
12. Emery, E., and Morin, A.: Traitement de la syphilis par les injections souscutanées d'arsénobenzènes, Bull. méd. Paris **34**: 549-551, 1920; Le traitement actuel de la syphilis: doit-il être intraveneux ou sous-cutané? La clinique **5**, May, 1922.
13. Hewins, W. W., and Acre, R. R.: Sulfarsenol in the Treatment of Syphilis, Urol. and Cutan. Rev. **26**: 561-564, 1922.
14. Doble, F. C.: Sulfarsenol in the Treatment of Syphilis, Lancet **2**: 243-244 (July 31) 1920; Sulfarsenol in Syphilis and Complications of Gonorrhea, ibid. **1**: 70-71 (Jan. 13) 1923.
15. Irgang, S.: Sulfarsenol in the Treatment of Syphilis, Am. J. Syphilis **7**: 318-322 (April) 1923.
16. Mills (Footnote 4, second reference).
17. Boone, F. H., and Weech, A. A.: Treatment of Early Hereditary Syphilis with Intramuscular Injections of Sulpharsphenamin, Am. J. Dis. Child. **27**: 39-48 (Jan.) 1924.
18. Belding, D. L.: Sulpharsphenamin in the Treatment of Syphilis, Arch. Dermat. & Syph. **9**: 470-478 (April) 1924.
19. Stokes, J. H.: A Technic of Intramuscular (Epifascial) Injection, M. Rec. **99**: 730-734 (April 30) 1921.

Some were distinctly less motile, while others showed little change. Three smears were examined.

9:45 p. m. On the fifth dark-field examination, motility proved practically nil; the number of organisms for each field averaged five; in many fields no organisms could be found. Three smears were examined.

10:45 p. m. On the sixth dark-field examination, organisms were still found to be present after searching several fields, but they had little or no motility. These findings were verified by another observer. Three smears were examined.

11:45 p. m. } Three dark-field examinations were negative for
12:45 a. m. } *Spirochaeta pallida.*

3/7/23

8:00 a. m. A dark-field examination was negative.

3/8/23 A dark-field examination was negative; the lesion appeared to be involuting.

3/9/23 A second treatment with sulpharsphenamin was given. A dark-field examination was negative; the lesion had diminished.

3/13/23 The lesion was nearly healed; an area of 0.4 cm. was left.

3/17/23 The lesion was entirely healed.

SEROLOGIC EFFECT ON EARLY SYPHILIS

In order to judge of the serologic effect of the action of the drug, it should be stated that the usual course of treatment in an early case was, for the first course, three injections of 0.4 gm. at three-day intervals, followed by one injection of 0.4 gm. every five days until eight injections had been given. Following the third sulpharsphenamin injection, inunctions were begun and continued in courses of eighty, bridging the arsphenamin intervals. The second, third and fourth sulpharsphenamin courses followed one another at intervals of six weeks.

Two patients with Wassermann negative primary syphilis have shown no symptom or sign of the disease for fifteen months. Five patients whose Wassermann reaction was positive primarily became completely negative on both blood and spinal fluid between the third sulpharsphenamin injection and the beginning of the second course, and have remained so for from ten to fifteen months under treatment and observation. Thus far, then, the results are 100 per cent., and there have been no neurorecurrences.

Of twenty-four patients with secondary syphilis, all had positive blood Wassermann reactions. Of twenty-one fully controlled, eighteen were rendered completely negative on the blood and the spinal fluid, and two were reduced in intensity from Kolmer 44 to 2— and 1— (very weak positive) on the blood. There were no neurorecurrences and only one persistent positive blood reaction in from six to fourteen months' observation and treatment. These results compare favorably with those expected from arsphenamin, and, so far as they go, are superior to our experience with neo-arsphenamin. The aggregate percentage of good serologic results for primary and secondary syphilis is 92.8 per cent., as compared with 94 per cent. in our patients treated previously by a similar system with arsphenamin and inunctions.

Neurorecurrence in Early Syphilis.—No neurorecurrences have developed thus far in the patients of this series treated by the foregoing system. We have seen one neurorecurrence in a patient whose first course consisted of arsphenamin, and one since the close of the foregoing series, in a patient who has had only sulpharsphenamin.

Latent Syphilis.—Of twenty-one patients with latent syphilis treated by eight-injection courses with 0.4 gm. for each injection, at one week intervals, with an interim of four months between courses, and with mercury by inunction and in some cases intramuscularly, 66.6 per cent. became Wassermann negative on the blood. Four were reduced from strong positive to weak positive; two were unchanged, and one failed to repeat the Wassermann test at the end of the course. Five of the seven resistant patients had had previous treatment without any effect on the Wassermann reaction. All the seven resistant patients had had only one course of sulpharsphenamin. All but one patient responded clinically.

Effect of Sulpharsphenamin on Neurosyphilis.—Twenty-eight patients received sulpharsphenamin without intraspinal Swift-Ellis-Ogilvie treatment. Of these, fourteen patients with positive blood Wassermann tests and abnormal spinal fluids returned to normal under intramuscular sulpharsphenamin and inunctions, with sodium iodid intravenously. Thirteen did so by the end of the first course of sulpharsphenamin, and one by the end of the second course. Some of these patients had received previous treatment for their neurosyphilis, ranging from six to twenty-seven injections of original arsphenamin, equivalent to from one to four courses, or from six to eighteen injections of neo-arsphenamin, equivalent to from one to three courses, without result. This certainly indicates a distinctly superior effect of sulpharsphenamin given intramuscularly on neurosyphilis, as compared with the results obtained in the same cases with arsphenamin and neo-arsphenamin intravenously. The collateral mercurial and iodid treatment was the same in the two.

Sixteen patients received intraspinal Swift-Ellis-Ogilvie treatments in conjunction with sulpharsphenamin intramuscularly. Blood was drawn on the morning following the intramuscular injection and the intraspinal treatment with arphenamin; reinforced serum was given on the morning of the second day after the intramuscular injection. Eleven of the sixteen patients, whose reactions on the blood and the spinal fluid were positive before the combined sulpharsphenamin-intraspinal treatment, became entirely negative on both blood and spinal fluid; ten of them in one sulpharsphenamin course, and one in two courses. The previous treatment of these patients whose condition was thus cleared up by sulpharsphenamin and intraspinal treatment had ranged from six to twenty-four arsphenamin injections with mercuric succinimid intramuscularly, inunctions and iodid. Five of the eleven patients had previously received intraspinal Swift-Ellis-Ogilvie treatment without result. This is again apparently a tribute to the superiority of sulpharsphenamin in neurosyphilis, and, perhaps, although the number of cases is small, to the efficacy of intraspinal treatment combined with sulpharsphenamin, as compared with sulpharsphenamin alone (69 per cent. versus 50 per cent.).

Both the blood and the spinal fluid in the aggregate of these patients with distinctly resistant neurosyphilis were reversed from positive to negative in 57 per cent. It had been impossible to secure these results by quite intensive treatment with the ordinary arsphenamin.

LATE GUMMATOUS SYPHILIDS

Of the twelve patients with late gummatous syphilids, only 30 per cent. obtained a reversal of the positive blood Wassermann reaction. None of the group received more than one sulpharsphenamin course. Four had previously had from fourteen to twenty-four arsphenamin injections with mercury and iodid without

serologic results. The clinical effect on the lesions was good. The gummatous ulcerations of the palate, pharynx and larynx of two patients had healed completely with nine days of treatment.

CARDIOVASCULAR SYPHILIS

Of eighteen patients, only thirteen had complete Wassermann checks. Four became Wassermann negative at the end of the first course, and two at the end of the second, making a reversal of serologic findings in 46 per cent. These patients were given from 0.2 to 0.4 gm. of sulpharsphenamin intramuscularly once a week or once in five days, depending on the vascular lesion. Seven of the thirteen patients responded well, clinically, with relief of precordial distress, dyspnea, and so forth. Rest in bed accompanied the treatment in some instances, but not in all. All patients tolerated the treatment well, and while five underwent no change, none were made worse, as too often happens with the intravenous use of the arsphenamins. One patient whose outlook was rated as poor at the outset recovered his compensation and was relieved of his anginal attacks, dyspnea and precordial distress. On his dismissal, it was believed that he had a good outlook, provided he restricted his activities.

One of the foregoing patients was under observation thirteen months; one, eight months; one, six months, and three, four months without serologic relapse. The ultimate results cannot, of course, be interpreted as yet.

SPECIAL GROUP OF WASSERMANN FAST CASES

Eleven patients not previously considered exhibited what was regarded as a resistant positive blood Wassermann reaction following amounts of treatment ranging from twelve to twenty-nine arsphenamin injections with mercury and iodid. Of these, all were rendered serologically negative to the Kolmer technic by a single eight-injection course of sulpharsphenamin intramuscularly, with mercury by inunction and iodid. These results are certainly instructive.

COMPARISON WITH NEO-ARSPHENAMIN

Sixteen patients had failed to secure a reversal of the positive blood Wassermann reaction to negative, following from six to thirty injections of neo-arsphenamin. Ten of the sixteen were rendered blood Wassermann negative by a single course of sulpharsphenamin intramuscularly. Of the ten patients, three had had six; one, ten; three, twelve; one, eighteen; one nineteen, and one thirty injections of neo-arsphenamin, respectively. The superiority of sulpharsphenamin by this route over neo-arsphenamin is certainly suggested.

Patients with a Marked Tendency to Relapse: Simultaneous Use of Mercury by Inunction and Intramuscular Injection.—Six patients who showed a definite tendency to relapse in the nervous system, and two with relapsing blood Wassermann reaction, were treated with sulpharsphenamin. All were rendered negative in blood and spinal fluid by a single course. The permanence of these results cannot as yet be vouched for. Two have been under observation thirteen months; two, twelve months; one, eleven months; two, eight months, and one, six months with continued treatment, without further relapse.

Thirty-five patients received mercuric succinimid intramuscularly coincidently with sulpharsphenamin. A number of these asserted that they had had less annoyance from the sulpharsphenamin than from the mercury. Ninety-one patients had 50-grain (3 gm.) mercurial inunctions by the Cole clean inunction technic throughout their sulpharsphenamin courses without signs of cutaneous irritation. There were no abnormal renal reactions. It is evident that simultaneous mercurialization can be successfully carried on with this drug.

Ability to Take Sulpharsphenamin Intramuscularly After Signs of Previous Intolerance for Other Arsphenamins Developed.—Five patients of this type were observed: three who had been refused further arsphenamin by their home physicians because of cutaneous reactions, and two who had had morbilliform toxic erythemas from arsphenamin while under our observation. Cutaneous tests for hypersensitiveness on all these patients were negative for arsphenamin. They were given full courses of sulpharsphenamin without event.

TOXIC REACTIONS TO SULPHARSPHENAMIN

Three per cent. of toxic reactions were observed. Two patients had fever, and two developed exfoliative dermatitis. The incidence of the latter complication is definitely higher than the expectancy with other arsphenamins, and in our opinion constitutes a definite drawback to the use of this drug, although our figures are as yet too small to justify a final opinion. It seems possible that closer study of the chemistry and manufacture of the drug may throw some light on the situation. The expected incidence of severe dermatitis, according to the Meirowsky [20] statistics, is one case in 1,800 injections of arsphenamin and one in 5,000 of neo-arsphenamin. Our own statistics show an expectancy of one case in 4,300 injections of arsphenamin, and those of Moore and Keidel,[21] of one in 4,280. With an expectancy of one in 700 for sulpharsphenamin, the dosage scale and the metabolism of the drug evidently need further study. Cutaneous sensitiveness to all the arsphenamins had developed in the one patient who was given cutaneous tests following dermatitis. We did not see any evidence of such an incidence of this complication as the 16 per cent. reported by Belding, which must, it seems to us, be ascribed to some abnormal constituent or increased toxicity of the preparations he used.

An instance of a hemorrhagic purpura, possibly part of a syndrome of plastic anemia with purpura and hemorrhage from the mucosas, known as a manifestation of idiosyncrasy to the arsphenamins, and perhaps especially to neo-arsphenamin, has been brought to our attention following the administration of sulpharsphenamin. While no case occurred in this series, we have recently seen a mild case with recovery, the first that has ever appeared in our service, following the administering of 0.4 gm. of sulpharsphenamin intravenously. This is undoubtedly a serious complication, and, if it proves to be commoner with sulpharsphenamin than with other arsenicals, may seriously curtail its usefulness. It is possible that it may not occur with intramuscular administration.

SUMMARY

Sulpharsphenamin by the intramuscular route, in our hands, has proved to be quite as effective therapeutically as arsphenamin and neo-arsphenamin from the standpoint of spirillicidal action and of the effect on the blood Wassermann and spinal fluid reactions, on the healing of lesions, and on the general well-being of the patient. We believe we see evidence of distinct superiority, in the treatment of neurosyphilis, over the

20. Meirowsky: Bericht der Salvarsankommission des allgemeinen aerztlichen Vereins in Köln, München. med. Wchnschr. **1**: 477-480 (April 23) 1920.

21. Moore, J. E., and Keidel, A.: Dermatitis and Allied Reactions Following the Arsenical Treatment of Syphilis, Arch. Int. Med. **27**: 716-747 (June) 1921.

older drugs, and distinct evidence of superiority to neoarsphenamin intravenously in all aspects of syphilis. The drug is well borne by patients with cardiovascular disorders, if used in moderate dosage. There is a distinctly increased tendency to cutaneous reaction as compared with the more familiar arsphenamins. This, we hope, may be corrected by closer study of the mechanism of its toxic effects and by refinements in manufacture. The results here given are for the intramuscular route, and we assume no responsibility for comparisons with subcutaneous and intravenous administration. The practicability of the systematic intramuscular treatment of all aspects of syphilis with sulpharsphenamin has been demonstrated to our satisfaction, barring further study of systemic complications due to the drug and the possibility that its effects may not be as enduring as they are striking. The question of ultimate sterilizing power and efficacy against relapse, as with any new drug, will require close scrutiny and the following up of cases over a considerable period of time.

THE INDICATIONS FOR AND METHODS OF EMPLOYING HYDROTHERAPY *

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It is quite obvious from facts gathered by actual observation that the medical profession of America bestows too little attention on the subject of hydrotherapy, more particularly, perhaps, as it is related to the treatment of chronic complaints. As a consequence, there is a lack of familiarity with the principles and technic of hydriatics. It is hoped that this paper may serve to arouse greater interest in the subject as a whole, although it will be, as the title indicates, limited to a discussion, somewhat in detail, of the indications for and methods of utilizing water in the management of only a certain number of acute and chronic complaints.

INDICATIONS FOR HYDROTHERAPY IN ACUTE INFECTIVE DISEASES

Among the more common acute infectious complaints that are greatly benefited by the proper application of cold water are typhoid fever, lobar and lobular pneumonia, influenza and tonsillitis.

In typhoid fever, the cold immersion bath has been to a great extent superseded by cold and cool sponging of the surface of the body. The favorable effect of cold water in typhoid is twofold: first, it lowers the temperature by abstracting heat; and, second, it stimulates the nervous system if the application is not too prolonged, in which case a depressing effect is obtained. Cold spongings of the typhoid patient are more extensively employed at present than any other method of meeting these indications. There is, however, presented an indication for the use of the Brand bath in typhoid fever and hospitals should be equipped to use it, but the method is not practicable for home treatment, chiefly for two reasons: first, too many attendants are required; and, second, a portable tub is not as a rule available. I also concur in the opinion expressed by Dr. Osborne,[1] that the method is too severe for ordinary home treatment. Again, certain contraindications to this method of using cold water in typhoid fever should be kept in mind: for example, intestinal hemorrhage, which demands absolute rest for four days; peritonitis and cases that first fall under observation at a late stage, in which there often is extreme cardiac weakness.

I think that the best substitute for cold tub baths is the cold pack, which should be used in the severer types of typhoid and other fevers. I have found it especially useful for children, who are prone to react in an unsatisfactory manner after tubbing. In cases of average severity and in mild forms, cold spongings meet the indications fairly well.

The use of cold water is indicated, as stated above, also in the treatment of the pneumonias, influenza and tonsillitis among acute complaints, although the methods of application differ with each of these diseases, as will appear hereafter. The last-named diseases are frequently encountered; hence, from the point of view of methods to be employed in the use of cold water, they are of far greater practical importance than typhoid and other fevers that are of rare occurrence, although hydrotherapy is more simple in application in their treatment.

METHODS OF APPLICATION IN ACUTE INFECTIVE DISEASES

Typhoid Fever.—When cold tub baths are employed in typhoid fever in hospital practice, a portable tub is to be brought to the side of the bed, and the patient is to be carefully lifted into water of 70 F. by means of a sheet, by two or more attendants, who then remove the sheet, and prevent chilling by rubbing the surface, more especially of the extremities. Since the principal effect of cold water is vasomotor nerve stimulation and not temperature reduction, the duration of the bath should be brief, as a rule; indeed, initial submersions should not consume more than five minutes, to be gradually lengthened to ten minutes. It is customary to begin tubbing when the temperature touches 102.3 F. After the bath, the patient is lifted back into bed; the skin surface is quickly dried, and he is given a small amount, 3 or 4 ounces (from 90 to 120 c.c.), of hot broth. The baths are to be repeated usually at intervals of four hours, although not infrequently a longer interval suffices in mild cases. In supersensitive and elderly subjects, who, as a rule, do not react after a Brand bath, I have found the gradually cooled bath satisfactory in its results. The temperature of the water should be 90 F. at the start, and should be gradually reduced to 80 or even 75, with accompanying friction to the skin.

The cold pack is useful in all severe, acute infectious affections requiring antifebrile and tonic measures. The technic is simple: the bed or cot or lounge, any one of which may be employed, is covered with a piece of oilcloth, and this in turn with a blanket. On the latter is spread a sheet doubled and wrung out of water at a temperature of 80 F., gradually lowered to 75 at subsequent packs. The patient is placed thereon, and the sheet and blanket are wrapped evenly about him; he may be left in the pack for a period varying from a half to one hour. Diaphoresis usually ensues, and this aids in maintaining the fall of temperature. The cold pack may be repeated at intervals of four hours, if needful. It should be followed by gentle friction, which has a warming effect, the while it abstracts heat. The cold pack is usually followed by calm sleep. I have observed excellent results from the use of the cold wet pack in acute infections attended with insomnia and

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1. Osborne, O. T.: Principles of Therapeutics, p. 666.

dilirium, the patient becoming quiet and inclined to sleep. During the bath, the face and neck should be washed with icewater several times and a wet turban applied, so as to avoid a too strong determination of blood to the head.

Cold spongings of the body of the patient are advised, as stated above, in cases of average severity and in mild types; this method is employed also in nontyphoid febrile states and in many chronic diseases. The details of application are simple, but not unimportant. The limbs should be sponged and dried in succession, and then the trunk, with water at room temperature, except during the warm season, when the temperature of the water may be considerably lower than that of the room. In elderly subjects and the very young, the initial temperature of the water should be higher, and should be slowly reduced during subsequent spongings. The application may be continued until the desired effect is produced unless it causes uneasiness, in which case it should be discontinued. In this connection, two facts of considerable moment should be stressed: (1) a temperature of the body at or above 102.2 F. is an indication for the use of cold applications, and (2) cold spongings should always be accompanied by friction, which not only prevents chilling, but also favors prompt reaction by dilating the peripheral blood vessels. These spongings may be repeated at intervals of from three to four hours, according to the severity of the type of infection.

Influenza.—In the conventional treatment of cases of influenza, a disease in which there is marked involvement of the vasomotor system even to the point of paralysis, hydrotherapy has been sadly neglected. Coal tar preparations, to reduce the temperature and allay the general pains, have been, unfortunately, too generally the vogue, causing further depression of the vasomotor system. On the other hand, a sponge bath with friction, if the temperature of the water is properly regulated, at three-hour intervals acts as a true vasomotor stimulant. The temperature of the initial bath should be 90 F., as a rule, and the temperature of each subsequent bath should be reduced 3 degrees until the level of 75 F. is reached. This treatment is to be accompanied by the drinking of 4 ounces (120 c.c.) of fresh water every third hour for its diuretic effect. The heart's tonicity is to be conserved in influenza; hence, the flushing of the kidneys by the administration of copious drafts of water is not to be advised, owing to the extra strain it would throw on that organ.

Should pneumonia, a common complication, supervene, hydrotherapy as recommended for that complaint should be instituted.

Pneumonia.—It is a common professional belief that the course of lobar pneumonia is uninfluenced by any known method of treatment, and this opinion is corroborated by the high and slightly varying fatality of the disease. Hydrotherapy rightly employed, however, is serviceable, and worthy of more general usage in this disease than it receives at present. Tub baths are not advised in pneumonia, since the necessary handling of the patient in connection with their administration would entail too much fatigue. The late Dr. Baruch reported excellent results from the use of the chest compress applied every hour. His technic is as follows:

Three thicknesses of thin, or two thicknesses of heavy, old linen are cut to fit the thorax snugly and to cover the entire chest from the nucha and clavicle to the last rib. It is wrung out of water of 60 F., and spread on a piece of flannel cut in the same shape, but 1 inch larger. One half of the flannel and damp linen is gathered into a fold, and the other is spread on the bed. The patient turns on one side, and the folded part is placed next to his side, so as to reach the nucha at the top; the patient is asked to turn on his back. As he turns on the outstretched portion of the compress, his arms are raised, the folded part of the compress is drawn from under him, and is quickly thrown over the chest to meet the other half; the upper flaps are brought over the clavicle, and the flannel is wrapped over the compress and secured by safety pins in front. The patient now lies in a snug cold vest, as it were.

It seems to me that since absolute rest is of first importance in the treatment of pneumonia, the hourly turnings of the patient, necessitated by the application of the jacket compress of Baruch, tend to disturb and exhaust the patient to a harmful extent. Equally efficacious, while the patient is at complete rest, are ablations of the front and sides of the trunk and the extremities, every three or four hours, depending on the temperature or the degree of toxemia, with a bath-mitten wrung out of water at 80 F., the water to be lowered two degrees at each subsequent bath until the temperature is 70. During the intervals, in the severer forms, a compress, extending from the clavicles and axillae to the pubes, and covering not only the anterior surface but also the sides of the trunk, wrung out of water at 70 F. and covered with flannel, may be used. In my view, hydrotherapy should not replace other generally accepted measures and drugs in the management of cases of pneumonia, but it is an adjunct of value. Finally, there is no objection to a combination of the cold air treatment and hydrotherapy, if the sick room is closed during the cold water applications.

In bronchopneumonia, hydrotherapy is useful in some cases, at least, more especially in children. A sponge bath (temperature 90 reduced to 80 F.) followed by gentle toweling of the surface, so as to secure full reaction, often exerts a happy effect. A high temperature calls for a cold pack, such as has been described, with the water at 80 F.; this lowers the body temperature and assists the peripheral circulation.

Tonsillitis.—In this condition, cold applied externally is of great value, not only in giving local relief but also in shortening the attack. One can use either flannel wrung out of ice water and applied around the neck or an ice-collar, which is equally efficacious.

INDICATIONS FOR AND TECHNIC OF HYDRIATICS IN CHRONIC DISEASES

Among chronic diseases in which hydrotherapy is indicated are tuberculosis, neurasthenia, rheumatism, gout, valve and myocardial affections of the heart, obesity and chronic nephritis. The precise indications for hydriatic measures will be pointed out in connection with each of these groups of cases, since they differ from one another in certain particulars, and this is also true of the technic. The physician must not fail to give the nurse or attendant, as the case may be, careful instructions as to the many details connected with the application of the water in each individual ease, since on the faithful execution of these depends the degree of success attainable. It is to be recollected that hydrotherapy is merely a useful adjunct to other therapeutic and hygienic agents in the treatment of these diseases.

Chronic Tuberculosis.—The external use of water somewhat below body temperature as a remedial agent in chronic tuberculosis is not appreciated to the extent that it deserves to be. The present day method of treating this ubiquitous complaint by a combination of such natural agencies as fresh, open air, rest and forced

feeding, which agencies stimulate nutrition and thereby increase resistance, is approved, and to these hydriatic measures are simply auxiliary. Rubbing the limbs and then the trunk with the hand-mitten, commencing with the water at 90 F. and reducing its temperature by 2 degrees at each application until it is 80 F., stimulates the vasomotor nervous mechanism; but this is not all. These treatments, if repeated twice daily, improve the appetite and digestion, and give a feeling of increased vigor. The hand rubbings should be done indoors at the usual room temperature, followed by gentle friction with a towel, so as to bring about reaction and avoid chilling. Walking patients or those who are without elevated temperature, in a word, convalescents, are signally benefited by this measure. Perhaps the method would be difficult to carry out in sanatoriums on account of the large number of patients.

It is asserted that the acid test of so-called neurovascular training is to be found in the statistics showing that weight gain and general invigoration take place in patients after improvement under the more usual method of treatment has ceased. Careful directions for any and every form of hydrotherapy employed in this complaint must be given to the nurse or attendant. The local use of cold, e. g., an ice-bag to the chest in pulmonary hemorrhage, is without avail.

Neurasthenia.—Next to attacking the cause and complete rest with generous feeding stands hydrotherapy as a remedial agent in the treatment of neurasthenia. A tub bath at 95 F. at bedtime, of a duration of from fifteen to twenty minutes so as to cause relaxation to the point of slight perspiration insures rest. After the bath, the patient should dry himself and quickly go to bed. Certain writers recommend tub baths at bedtime at 100 or even 105 F., but I have found them to be too stimulating, and often to cause insomnia.

In the morning, these patients should take a tepid tub or sponge bath in a warm room; the temperature of the water should be 90 F. at first, and reduced by 1 or 2 degrees each day until 80 F. is reached. This is to be followed by active friction to the skin, commencing at the feet, so as to secure a good reaction. Whenever practicable, the patient should take the open air for ten minutes immediately following the bath; this improves the appetite and digestion, while the bath has a mild but enduring tonic effect. Patients in whom psychasthenia is marked require a more tonic effect from hydrotherapy, but this must be brought about in a gradual manner. We may employ the douche at a low pressure, 20 pounds (9 kg.), and increase 1 pound each day until 35 pounds (16 kg.) is reached. Equally efficacious is a sitz-bath in my hands. The patient sits in a tub containing 15 inches (38 cm.) of water at 100 F. A sponge is dipped into water at 90 F. and squeezed, causing a flow of cool water over the nucha, shoulders and trunk of the patient; this is followed by friction. The temperature of the water should be lowered 1 degree daily untl it is 85 F., which is sufficiently stimulating to the cutaneous nerves, as a rule, to bring about improvement in the nervous tone of the patient. The wet pack and spinal douche may also be indicated in the depressed type of cases.

Rheumatism and Gout.—In the treatment of chronic rheumatism and gout, it is important to rearrange the diet and insist on a certain amount of exercise being regularly taken. There is also presented an indication for the use of iron to overcome associated anemia in a considerable number of cases. Baruch [2] states that:

> The patient should be wrapped in a blanket pack snugly, allowing him to perspire freely for half an hour, followed by rapid ablutions or affusions at 95 F. The temperature is daily reduced one or more degrees, but not below 85 F. If an institution is accessible, the hot-air bath with light perspiration, followed by the circular douche at 100 F. for two or more minutes, quickly reduced at its termination to 95 F. or less, is useful.

In robust individuals the Turkish bath often proves serviceable, but is as often misapplied, when it does positive harm. Its use by ignorant patients should never be sanctioned by the physician. Among the unenlightened, electric cabinet-baths are to be encouraged in preference to the Turkish bath, thus obviating also the ill effects of the cold plunge. Many persons, however, manifest a strong liking for the latter. I have obtained excellent results from the cabinet hot-air bath administered in a systematic way in gouty subjects, better far than from the Turkish bath in the majority of cases. The patient is not required to breathe superheated air, but that of room temperature—a decided advantage.

Valvular and Myocardial Heart Disease.—It is well known that the contractile power of the small arteries drives the blood forward, thus supplementing the pumping action of the heart. In organic heart lesions, the work of this organ can be lessened by increasing the propulsive action of the minute blood vessels. To accomplish this object and at the same time increase cardiac power in a reflex manner, we have several hydriatic measures of considerable practical value; they owe their virtues directly to vasomotor stimulation. Daily, cool or cold mitten friction is applicable to practically all of the cases, although the amount and severity of the frictions and temperature of the water must be varied to suit the individual case. I concur in the opinion of Abbott,[3] that overstimulation is not likely to occur from the cold mitten friction in these cases, in the stage either of complete or of failing compensation.

The Nauheim or effervescent bath is a more powerful stimulant to the peripheral circulation, through the chemical irritation of the skin produced by the carbon dioxid gas plus the saline constituents of the waters, than cold mitten friction. In order to obviate overstimulation, the duration of these baths should not exceed from five to eight minutes at the start at a temperature of 95 F. If the effect is favorable, the bath is gradually lengthened up to fifteen minutes, while its temperature is gradually lowered to about 85 F. Overstimulation, which is evidenced by dyspnea, insomnia, palpitation and cyanosis, is to be avoided; but, should it arise, the baths must be promptly discontinued temporarily. The course usually continues for three weeks; it is subject to marked variations, however, in accordance with the indications of special cases.

I have had an opportunity in the past to study the effects of the Nauheim bath in loco and became convinced of its efficacy, especially in mitral disease during early broken compensation and in myocardial degeneration of moderate grade. Doubtless, the heart muscle is invigorated and its nutrition improved, owing to an improved central as well as peripheral circulation.

Dr. Guilleaume [4] advocates the effervescent bath as a potent help in the treatment of angina pectoris, by increasing the reserve force of the myocardium and diminishing the peripheral resistance.

The artificial Nauheim baths are less efficacious than those administered at the spa, although of distinct value.

2. Baruch: An Epitome of Hydrotherapy, p. 193.

3. Abbott: Hydrotherapy, p. 288.

4. Guilleaume, E.: Natural Effervescent Baths in the Treatment of Angina Pectoris, Arch. Med. Hydrology, May, 1924, p. 159.

The Schott treatment consists of a combination of Nauheim baths and resistance exercises. The effects of these two elements of the treatment are to be carefully noted from day to day. The usual result of a Nauheim bath is to cause a noticeable decrease in the area of cardiac dulness, as can be shown by percussion, and the same thing occurs to a less extent, after the resistance gymnastics. I have seen cardiac dropsy disappear promptly during a course of treatment at Nauheim.

Obesity.—Hydrotherapy is a valuable adjunct to an appropriate diet and systematic exercise in reducing overweight. My personal experience coincides with that of Hinsdale,[5] who found that the hot-air or electric light cabinet "followed by the various douches in succession constitutes a method inferior to the full hot bath with subsequent pack." In subjects showing a rheumatic or gouty disposition, the latter is the method of choice. In my opinion, however, cold baths (70 F.), if there is no contraindication, followed by vigorous hand rubbing of the surface of the body, yield the best results. These baths should be brief, and the temperature of the water not too low at the start. For example, I am in the habit of advising a commencing bath at 90 F., unless the patient has been in the habit of taking cold tubs. While the effect of balneotherapy is less marked than that of active muscular exercise, it is, nevertheless, of considerable value in weight reduction, since it promotes oxidation. Pope[6] says: "Cold water has a direct positive and unquestioned influence upon all metabolic activity."

Chronic Nephritis.—There is no disease in which the prudent use of hydriatic measures is more valuable than in chronic nephritis. Hypertension, which is commonly encountered in this complaint, responds more promptly to hot tub baths than to any other single measure, if carried to the point of free diaphoresis. The warm tub should be taken daily (if the strength of the patient permits) for a time at a temperature of 95, or even 100 F., and it should be of about fifteen minutes' duration, as a rule. The electric cabinet bath is also serviceable; it should be used every second day until the desired effect is produced. After a period of one month's use of active sweating methods, the hot and the moderately cold douche to the spine over the lower dorsal and lumbar regions may conclude the baths, for their stimulating effects on the renal function. On no account should the douche be continued if decidedly chilly sensations are produced by it. I am strongly of the opinion that, in all subacute types of nephritis, sudorific baths alone exercise the happiest influence by lessening renal congestion.

250 South Seventeenth Street.

ABSTRACT OF DISCUSSION

DR. MARY FREEMAN, Perrine, Fla.: I thoroughly agree with Dr. Anders in the statements he has made regarding the treatment of the neurasthenic subject by hydrotherapy, and the results obtained, which are splendid in these cases. Water serves a good purpose in this type of case. But I do not agree with him as to the treatment suggested in influenza and bronchopneumonia. In influenza, the patient is so apt to drown in his own fluid in the lungs that it takes a very slight chill on the surface to fill the pleural cavity with a fluid that will kill the patient. In bronchopneumonia, the warmer the outside of the chest is kept, the better the patient gets along.

5. Hinsdale: Hydrotherapy, p. 192.
6. Pope, C.: New York M. J. **118**: 44 (July 4) 1923.

THE USE OF GENTIAN VIOLET IN DIPHTHERIA CARRIERS

PRELIMINARY REPORT *

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Bacteria so fixedly permeated by certain dyes that the removal of the straining substance is impossible by means of certain reagents readily decolorizing other bacteria similarly treated apparently have been subjected to a pronounced germicidal action.

A recent contribution to the literature on this subject by Young and Hill [1] again demonstrated this fact, and would seem to make feasible the use of this knowledge in still other fields.

If gentian violet in very weak solutions has a pronounced bactericidal action on gram-positive organisms in closed cavities or passages, such as the chest, kidney, bladder and urethra, it seems entirely logical that it should have such an action on the same class of organisms in the throat and nose, especially when the dye can be used in a much stronger solution than is possible when given intravenously.

As the Klebs-Loeffler bacillus is a gram-positive organism, it was felt that an application of gentian violet as a local reagent in chronic carriers, or in cases of diphtheria which continued to give positive cultures, was worthy of trial. This procedure was not put into practice until nearly the end of a slight epidemic, and the opportunities for observing its value were very few. However, though too few to afford a basis for any positive conclusions as to its value as a routine measure, the results seemed striking enough to warrant a preliminary report with the idea of stimulating further investigation, and with the hope that the method may be tried in enough cases to prove or disprove its value.

REPORT OF CASES

A boy, aged 9, who had diabetes, showed a small patch of exudate on the left tonsil, which both smear and culture proved to be diphtheria. After proper desensitization, he was given 10,000 units intravenously, the membrane promptly disappearing.

Examination of his sister, aged 11, revealed a clear throat, but cultures yielded nearly a pure culture of the diphtheria bacillus. At the time of the first examination, she was given 1,000 units intramuscularly for prophylaxis.

The tonsils in both these children showed chronic inflammatory changes.

Cultures taken about every three days continued to be positive from both boy and sister for an unusually long time. Various sprays were used, and repeated local swabblings, with no change in the cultural findings. A 2 per cent. aqueous solution of gentian violet in an atomizer was then ordered as a spray five times a day. In forty-eight hours a negative culture was secured and a second, twenty-four hours later. The spray was directed to be discontinued, and twice, at two day intervals, cultures of the throats were taken, with negative findings.

Two other contact cases, taken from a different family and similarly treated, gave two negative cultures after forty-eight hours, and a negative culture two days after the spray was discontinued.

* Read before the Polk-Marion-Yamhill Medical Society, May 20, 1924, and the County and City Medical Society of Portland, Ore., May 21, 1924.

1. Young, H. H., and Hill, Justina H.: The Treatment of Septicemia and Local Infections, J. A. M. A. **82**: 669 (March 1) 1924.

A fifth case was one of diphtheria clinically and bacteriologically, which was not seen until about the fourth day of the disease. The parents had refused to allow antitoxin to be used, and the child, who evidently had only a mild infection, showed a small piece of beginning desquamating membrane on one tonsil. But little intoxication was noted. Directions for the use of gentian violet were given, and in forty-eight hours no membrane was to be seen. A culture taken at this time showed few diphtheria colonies. A succeeding culture, twenty-four hours later, gave negative results.

This family was not a dependable one; it rebelled at quarantine and treatment in general; it had no nurse to see that instructions were carried out as ordered, and I believe that at the time of the first negative report, it discontinued the use of the spray. It certainly had not used it the day of the succeeding visit, or forty-four hours after the obtaining of the negative culture, for the throat was not stained with the dye. The culture taken at this time again showed some diphtheria bacilli. This family was so disgruntled with the last report that it sought other medical attention and so passed to other hands.

Reaching the decision to report these cases, I mentioned something of this work to Dr. D. R. Ross. He said that he had thought of the possibility of this dye, and had a few days previously advised the use of a 5 per cent. solution, but had discontinued it after it had been used once, as the patient complained of a burning sensation in the throat.

Dr. Ross was then daily swabbing his patient's throat with a solution of mercurochrome-220 soluble, but still obtaining positive cultures. He adopted the suggestions outlined in this report with the result that, after two days of repeated sprayings, he obtained two consecutive negative cultures at twenty-four hour intervals.

METHOD USED

The method used is very simple. It is, however, absolutely essential that the nurse or some member of the family be instructed how properly to direct the spray so that it reaches every part of the fauces and the nares, and to demonstrate this to them in person.

The patient, on awakening, and immediately after the three main meals of the day and once during the evening, should have the nares and the fauces well flushed and cleansed with a light saline solution, to rid this region of as much mucus as possible. This may be done by a spray or by douching by the patient or by an attendant. Immediately after this, the nares and fauces are well sprayed with a 2 per cent. aqueous solution of gentian violet in the ordinary atomizer.

After each spraying, the fauces should be inspected to see that the dye has reached every part that can be seen.

It is suggested that the cultures be taken at some time during the day, immediately before one of the local treatments.

As a check, after two negative cultures have been received, the dye should be discontinued, and, forty-eight hours later, another culture made. This was done in four of these cases, with negative cultural findings.

If it is satisfactorily proved that these throats remain free of the diphtheria bacillus, the last procedure, of course, would not be necessary. It will be noted that four of these cases were so checked.

The patient and family should be informed that the dye, though staining everything with which it comes in contact, will not leave any permanent discoloration of the skin, mucous membrane or teeth.

If, within the short time herein noted, this dye proves efficacious in a majority of diphtheria patients after proper antitoxin treatment, and in diphtheria carriers, its value as a remedial agent and in preventing economic loss due to continuous quarantine needs no discussion.

HEXAMETHYLENAMIN POISONING IN THE RUBBER INDUSTRY

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Hexamethylenamin poisoned sixty employees in a local rubber factory. Acute dermatitis of the exposed surfaces was the principal symptom. Removal of this chemical from all rubber stock alone prevented further cases.

RUBBER CATALYZERS

Rubber is a colloidal, organic compound, the exact chemical composition of which is unknown. It was discovered that when rubber was mixed with sulphur and heated, the product became stable and useful. This process is called vulcanization.

It was next found that the addition of lead accelerated the action of the sulphur, and made a better end-product. Later, several organic chemicals have been used as accelerators or catalyzers, and hexamethylenamin is one of the most recent.

Hexamethylenamin, $C_6H_{12}N_4$, is formed by the action of ammonia on formaldehyd. It occurs in colorless, odorless crystals, or as a white crystalline powder, having a slightly sweetened taste. It is soluble in 1.5 parts of water or 12.5 parts of alcohol. In medicine, it is commonly used as a genito-urinary antiseptic. It is marketed under various trade names.

In the rubber industry, hexamethylenamin is scattered through the rubber during the mixing process in 0.1 per cent. strength. This percentage means that only an ounce or two of hexamethylenamin was used in the average bath of a hundred pounds or more of rubber stock. In the factory to which I refer, it was mixed in heel and tube stock only. The worse cases came from the heel molding room, where the crude heels are placed in molds, which are inserted into hot hydraulic presses. When the vulcanization period is over, the molds are removed, and the hot, smoking heels knocked out from the molds by the men.

SYMTOMS OF DERMATITIS

The first symptoms were redness of the face and exposed parts of the arm, followed by fine, watery, itchy vesicles, and later edema. The forehead, cheeks and sides of the neck were the affected parts of the head; while the backs of the hands, between the fingers, and the entire forearm were the other parts involved. Extreme itching was the principal symptom complained of by the men. Many of the patients later had indolent, deep infections that resisted treatment.

REPORT OF CASE

M. O'N., a man, aged 40, white, employee of the heel moulding room, came to the first aid hospital, complaining of itching blisters on the head and arms. There were fine vesicles over the sides of the neck and about the mouth. The forehead was reddened and rough. The exposed parts of both arms were reddened, and between the fingers were groups of fine vesicles. The patient was given a soothing,

antipruritic ointment, and he returned to work. Two days later he returned to the hospital with marked edema of the face, diffuse redness, and extensive vesiculation of the sides of the neck, cheeks and forehead. The forearms were much worse, and the backs of the hands were edematous. He was sent home, and with soothing, antipruritic washes, in a week he had improved. When he returned to work his face was desquamating and there was a beginning of some small infections in the forearm. A few days of work brought on a more severe recurrence of all the previous symptoms, and he went home for the second time. After this attack, there appeared many superficial and deep, indolent infections that resisted the usual treatment. These infections persisted for several weeks. He was disabled for more than three months and did not work until after the hexamethylenamin had been discontinued. Since then he has had no skin disease.

PREVENTION AND TREATMENT

When the first cases were found, the men were advised to wear long sleeves and cover their necks with gauze. A wash of sodium bicarbonate and glycerin was provided, to be sopped on the irritated surfaces many times daily. This helped many, but as the cases increased in severity, the hospital dispensed white wash,[1] a protective zinc ointment containing 25 per cent. crude coal tar, and bromids internally. This relieved the patients when they were kept away from hexamethylenamin. The infections were treated by poultices, incision and drainage, and the use of ammoniated mercury ointment in from 3 to 10 per cent. strength.

Many preventive measures were tried unsuccessfully. The area about the heel presses was very hot, and cold air blowers were operated in order to cool the hot gases from the open heel molds. The men objected to the cold air from the blowers striking them, and they were stopped. Also, more ventilation was provided. Finally, the chemical department removed hexamethylenamin from the new stocks, and most of the cases quickly subsided. Occasional cases of acute dermatitis still persisted, and the hospital was puzzled until it was found that scrap rubber containing hexamethylenamin was being worked up in the fresh stocks. Even with this continued dilution, fresh cases continued to appear till all the hexamethylenamin stock was exhausted.

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THE OPPORTUNITY OF PREVENTIVE MEDICINE IN INSTITUTIONS OF HIGHER LEARNING *

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Effective public health work depends on investigation, an adequate force of trained sanitarians, and a public appreciative of the social, economic and health benefits to be derived from the application of science to personal and community welfare. Colleges and universities are admirably equipped to make contributions to one or to all of these essential components of applied preventive medicine.

During the last half century, institutions of higher learning have made discoveries in the field of preventive medicine with such rapidity that only extraordinary effects in education can make it possible for one or even two generations to apply the knowledge that has been gained, or to estimate its benefit to society. The urgent need of the hour is not so much more knowledge as it is greater motivation of health activities in the daily life of the individual and of the community.

The departments of preventive medicine and schools of hygiene of universities are training in increasing numbers the expert personnel needed to direct the various public health organizations now engaged in service, and to supervise other agencies that will inevitably come into existence as the public insists on the further application of science to civic betterment. With the trend of public health administration toward the county as a unit, and with the present need for experienced full-time health officers exceeding the supply, the problem of providing an adequate force of sanitarians becomes threefold. Colleges and universities must provide education in sanitation, they must encourage students to prepare for a career in public health, and they must use their influence with the public to render the position of the health official attractive and stable.

Division of public health activities into specialties further emphasizes the shortage of individuals well trained in sanitation. The development of engineering and of transportation, and the rapid change of the population from predominantly rural to predominantly urban, create new sanitary problems almost as fast as, if not faster than, education is able to provide experts to solve them, and faster than it is possible to produce public sentiment willing to give the necessary financial and moral support essential to their solution.

With due recognition of the great importance of research and of the training of future sanitarians and public health administrators, I desire to point out and to emphasize those conditions in institutions of higher learning which are opportunities for preventive medicine to mold an appreciative public opinion through the future leaders of the community.

THE FUTURE COLLEGE GRADUATE A NATURAL ALLY OF PREVENTIVE MEDICINE

Knowledge now available for use by sanitarians is applicable in the general production of health and happiness only as the public comprehends its value. It is obvious that an intelligent layman can insist on the adoption of public health measures, and direct attention to the social and economic advantages to be derived from them, more effectively than a medical man, because the layman is less likely to be considered by the public as being interested in them personally.

Unfortunately, ignorance of the possibilities and principles of hygiene is not limited to the so-called uneducated and illiterate classes. Some well educated persons, in fact, experts in their particular fields, know relatively little of sanitation or of the structure and function of the various organs of their own bodies. As a result, they often accept fads as facts, or even undergo treatment that an elementary knowledge of anatomy, physiology and physics would reveal at once as absurd and fraudulent. Because of their intelligence and ideals, college graduates are the natural allies of scientific medicine. Yet, not infrequently they are used by the quack to further his own ends. He profits by their ignorance of the factors of health, deceives them and uses their high sense of justice, their reputation, ability and resourcefulness to perpetuate his fraud and to reach more of the gullible.

It takes but a cursory glance at "Who's Who in America" to realize the great potential influence and achievement that is present in the college student of

1. This consisted of: phenol (carbolic acid), 2 gm.; zinc oxid, 10 gm.; glycerin, 10 c.c., and lime water, 250 c.c.

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

today. There is no greater field for the advancement of preventive medicine than in the institution of higher learning. In it is the opportunity to convey to the community leaders of the future clear conceptions of the great possibility of science to promote health and happiness. In it is found the chance to create a consciousness responsive to public health ideals. In it are numerous occasions that may be used to incite inquisitiveness and thought, so that the college graduate will consider measures and medicine in the light of the scientific training he has had, rather than blindly accept deception as fact.

In the attempt to reach the future educated laymen, their minds should not be overloaded with unconnected and confusing technical facts. Effort should be made to stimulate an interest in science as it pertains to health and civic betterment, through instruction in elementary personal and community hygiene. Emphasis on the sanitary aspects of the subjects the student is taking is an admirable means of presenting the practical side of his courses and of increasing his interest in personal and public health.

Lighting, heating, ventilation, and installation of mechanical equipment of buildings are technically the province of engineering, but the environment they create is the problem of hygiene. Water supply, sewage disposal, drainage and general sanitation have both medical and engineering phases. While the future engineer must be taught to employ the best methods to provide a wholesome environment, he should not complete his education without an appreciation of how his work in engineering influences the health of the individual and of the community.

Colleges of agriculture with their animal and plant breeding, animal physiology, pathology and nutrition, dairy husbandry and veterinary medicine offer courses that contain a wealth of human hygiene in analogy. Slight emphasis on the great similarity between animal and plant heredity, variation, evolution, structure and function to those of man provides a broad conception of health. Comparison of man, animal and plant in health and disease removes the air-tight compartments that have already too long restricted the progress of preventive medicine, and lost to public health workers the invaluable assistance of their natural allies.

Botany, with its bacteria, yeast, fungi, toxic plants, crown gall, hay-fever producing pollens, and its great contribution to heredity and evolution, offers an excellent opportunity to train students to think of medicine in terms of science. Zoology, with its origin and development of life, its heredity, evolution, cytology, embryology and comparative anatomy and physiology, should, almost without special health emphasis, render those who study it immune to unscientific conceptions. Entomology, physiology or psychology have like power to promote sound thinking and definite action toward public health measures.

The training in household economics is largely personal and domestic hygiene. Its students, therefore, are prepared to comprehend sanitation as it pertains to their daily life and to the community. Many of the problems of sociology are those of public health, with a slight difference of approach. Social relations and evolution, dependence, delinquency and crime all have their health aspects. Community problems, charities, and factors that determine and influence population, are conditions that need the attention of preventive medicine as well as of sociology.

The foregoing subjects by no means exhaust the divisions and subdivisions of engineering, agriculture, biology or the humanities that contribute to the advancement of public health. Philosophy, geology, chemistry, physics, and even the classics, have sanitary phases that make them worthy allies in the promotion of health.

When hygiene has a place among the required courses of institutions of higher learning, commensurate with its importance to the individual, to the community, and to the nation, the contributions that various branches of learning have made to health will be among the first to receive emphasis in the classroom, because of their practical value and their power of appeal for public support through their ability to increase happiness and prosperity. Their failure at present to receive proper emphasis is due mainly to the fact that experts in many lines have not come to the full appreciation of the wide ramifications of preventive medicine and of the particular relation of their training to it. The establishment of a proper correlation between public health and scientific and cultural subjects is to render more comprehensible the relation of the physical and social world to human life, progress and welfare.

THE TREND OF PUBLIC HEALTH AND THE GREATER NEED OF LAY COOPERATION

The first systematic effort of preventive medicine was environmental. To insure wholesome surroundings, it abated nuisances, drained stagnant pools, provided safe water supplies, inspected food, and disposed of sewage and refuse. It created sanitary science and armed itself with a modicum of police power. This, in the language of Kelley, was "the era of sanitation."

With the epochal discoveries of science and medicine during the last half century, public health work centered on the great epidemic diseases, and, with the exception of influenza, brought them under control. But the methods employed, isolation, quarantine and immunization, further encroach on personal liberty and are effective only when public opinion is so educated that the majority of individuals are willing to sacrifice for the common good and express their desire to do so by extension of the police power of their boards of health. When this public sentiment is lacking, this authority is withheld, and preventable disease flourishes and unnecessary deaths occur.

The ethnologic changes in the population of the country, the marked urbanization of its people, the phenomenal rise of industrialism, the development of transportation, and the extension of the application of the philosophy of brotherhood, concentrate the great problems of public health in the individual himself. These rapid transitions have produced economic, social and hygienic conditions that are intimately personal. Therefore, the future advancement of public health depends largely on the success of making the intelligent citizen an active public health worker.

Thirty years ago, 35 per cent. of the people of the United States lived in towns; today, more than 51 per cent. of the population is urban. An inevitable result of this change has been a greater and greater differentiation of occupation, which, in many instances, has meant a higher vocational death rate. This, in turn, has created a demand for special safeguards to insure sanitary surroundings, and definite precaution on the part of the individual to protect himself when at work.

With industrialism has come overcrowding in slums and tenements, with the consequently lowered bodily resistance and greater opportunity for the spread of

disease. Racial deterioration due to submergence, depression and environment detrimental to physical, moral and spiritual development must be met, if civilization is not to provide its own destruction. The tendency of vice and crime to locate for concealment and profit where the population is dense adds increasing complexities to the personal equation in public health.

Industrialism greatly influence the birth rate, particularly among the more intelligent and more ambitious who seek a high level of living. The offer of economic independence to women tends to defer marriage. Fatigue, poor housing, and nervous strain have a similar effect. The employment of married women increases the infant death rate and reduces the number of births. Certain occupations and diseases due to bad environment cause racial degeneration through injury to the germ plasm. Coincident with this shifting of the center of population from the country to the city, the average span of life has risen from 39 to 54 years, as the result mainly of the lives saved by infant welfare work and by the control of epidemic diseases. This increase in expectation of life is confined almost entirely to the age groups under 35. At the ages of 45 to 50, there are four more deaths per thousand than twenty years ago; at 50 to 55, six more; and at 55 to 60, eight more.

This increased mortality in those of middle and advanced age bears such an intimate relation to the habits, desires and vocation of the individual as to be unassailable except through him. The reduction of deaths from cancer, the success of mental and oral hygiene, depend largely on the intelligence of the individual. The prevention of the degenerative and venereal diseases requires personal cooperation.

An epidemic of traumatism has succeeded an epidemic of infection. The suicide rate is about that of the whooping cough death rate. About as many people were killed in automobiles at railroad crossings last year as died of scarlet fever in 1920. Fatalities resulting from automobile accidents in 1923 are about the same as those from diphtheria and scarlet fever combined. Accidental deaths in industry are approximately equal to the sum of the deaths due to measles, whooping cough and diphtheria. There are 700,000 persons injured in their occupations whose disability causes a loss from work of not less than four weeks. Industrial poisoning produces its great quota of disease and death, and in some of the more sanitary cities, the exhaust gas from the automobile is more fatal than the typhoid bacillus. The reduction in the great number of deaths, injuries, and cases of disease from accident and occupational poisoning involves the individual as employer, employee and chauffeur.

The increase of feeblemindedness, homicides and sucides, the wide prevalence of crime and delinquency, and the increasing tendency of the human nervous system to exhibit symptoms of stress and maladjustment, require dealing with the individual personally or through his environment. The gradual disappearance of racial strains renowned for their contribution to human progress, and the very low birth rate among those whose ability to obtain culture and leadership means so much to civilization, present difficulties alike to sociology and to preventive medicine. The only solution is personal; the only approach is through the individual.

Future advancement in public health will be greatly restricted unless educated men and women become willing to direct, release and further restrict their fundamental instincts of acquisitiveness, of preservation, and reproduction in the interest of themselves and of the race. It will require their example and their support in every community, if the public is ever to promote its own physical, mental and moral health in such a way as to prevent civilization showing symptoms of decadence. Correspondingly, sanitarians must make greater effort to obtain the cooperation of college graduates in public health work, for in them are the intelligence and ideals essential to increase the average span of life and to add to the sum of human happiness.

HYGIENE IN COLLEGES AND UNIVERSITIES

Hygiene in institutions of higher learning should be a great clearing house where the well established results of research are given to the public through the education of its future leaders in the application of the newly obtained knowledge. Education in hygiene, by instruction in the classroom, by conferences with members of the health service staff, and by sustained efforts to maintain the best sanitary environment on the campus and in the lodging houses, is the easiest, shortest and quickest route by which the great progress in preventive medicine during the last century may be brought to the community.

When the graduate goes forth from college with a clear conception of hygiene and sanitation, he will carry with him the greatest insurance against failure, maladjustment and unhappiness. If he appreciates the power of preventive medicine to promote the health, happiness and prosperity of the individual in his home and in his vocation, education will have reached another milestone in its service to humanity.

The amount of time given to a general required course in hygiene in a university or college will be determined largely by the instruction given in the public schools from which its students come. Where "health habits" are taught in the primary grades, and hygiene is combined with the instruction of physiology in the departmental schools, and hygiene and sanitation are given a place in the curriculum of the high school, the subject in an institution of higher learning should be emphasized correlatively and vocationally.

As every one should have a sound knowledge of the elements of hygiene, it should be given greater stress in the public schools, because only between 5 and 10 per cent. of the pupils who enter the first grade seek registration in an institution of higher learning. However, so long as hygiene is not adequately taught in the high school, or even if it were, it should have a place in the curriculums of colleges and universities for the following reasons:

1. As a means for the development of physical and mental efficiency, the creation of a wholesome attitude of mind, and for the cultivation of moral and social qualities.

2. As a decisive factor in determining that the healthfulness of environment shall more closely approach the maximum commensurate with sanitary knowledge.

3. As training essential to intelligent participation in enterprises of civic betterment, and to the assuming of the duty of a well informed citizen in public health advancement.

4. As a protection against disease, and as a guarantee that the education and experience obtained by graduates of institutions of higher learning shall function for society for the longest period possible.

5. As specific information having a far reaching influence on vocational success.

6. As education necessary to evaluate properly health fads, fancies and fictions that are continually being foisted on the public by well meaning individuals who have a tendency to generalize from a single personal experience, and to theorize on personal health without due consideration of scientific facts.

7. As a safeguard to the individual and to the public against the tremendous economic loss (to say nothing of the loss of health and life) from medical frauds, cults, quackery, and imposition on the sick of whatever kind.

8. As one of the best methods to bring to the public the benefits to be derived from the enormous sums being spent by philanthropists and bodies politic, for research in the domain of preventive medicine.

VOCATIONAL HYGIENE

There are very few professions whose practice or whose environment incidental to their pursuit does not present hygienic situations that are characteristically occupational. The conditions influencing health and human efficiency are usually so important as to be more or less decisive in determining the financial and ultimate success of those engaged in the vocation. In fact, hygiene is as essential in occupation as oil is to machinery.

Pneumonia at the Rand, yellow fever at Panama, hookworm anemia among the employees of the Southern factories, the use of lead in 150 trades, the menace of dust in industry, and the blight of malaria to agriculture in the lower Mississippi valley, are typical examples of the far-reaching relationship of health and occupation. The same, in a measure, may be said of the health hazards of the school and of its relation to the spread of epidemics, particularly in rural communities, or of intestinal disease because of polluted water supply or improper sewage disposal in country houses.

For the student of social science it may be recalled that unrest, troublesome discontent, and antisocial theories and acts, are frequently the hybrid offspring of bad living and working conditions. It is a fact that a number of the ultraradical leaders of the world are pathologic progeny resulting from the union of short-sighted economy and insanitation in the home and in the workshop. They have obtained a mistaken perspective of the world, because they have visualized it through eyes rendered myopic by the conditions of their environment.

Many of the students now training to enter industry and engineering will, within a decade, be faced not only with the problems of their profession, but with those of the health, efficiency and mental attitude of their associates and their employees. Accidents, industrial diseases, sick benefits, health insurance, and compensation acts demand that directors of all great enterprises give consideration to industrial hygiene. Knowledge of vocational hygiene would be of great service to them in the practice of their profession, for many an engineer and manager have found that a sick or unhappy employee may defer success as long, or prove as great a liability, as a flaw in steel, an error in reinforcement, or a business depression. Unless they appreciate the relation of the needs and safeguards of the great human element essential to their success, their technical knowledge will be used with difficulty.

The farm, from the sanitary standpoint, presents in miniature the problems of the municipality. Water supply, milk, plumbing, sewage disposal, heating, ventilation, lighting, and construction of country dwellings are of interest to a particular group. It would seem, therefore, that all students taking agriculture, and others who have definitely decided to live in the country, should have a thorough knowledge of rural sanitation. Such learning would not only make the country home safe and more attractive, but it would limit the number of epidemics that occur in the cities but have their source in rural districts.

Students preparing to enter the teaching profession should have a sound elementary knowledge in school hygiene. They should know what the standard features of a school building are; how to make a physical inspection of school children; what, in general, the duties of a school nurse are; how medical inspection is made effective; the educational, nutritional and social value of the school lunch; the cause of malnutrition and its prevention, etc. In a word, they should know the hygienic aspects of their profession.

PHYSICAL EXAMINATION

The periodic physical examination is the next weapon to be employed by preventive medicine in its assault on the annual death rate. It is the most effective means available to increase the average expectancy of life by lowering the rising mortality rate in the middle-aged group. The required medical examination of students on registration, the reexamination, conferences relative to defects found, and "follow up" work among them, present a rare opportunity to demonstrate the importance of medical examination and to pass its value on to the public. The physical and clinical examination of a portion of so representative a group from our population as university students is, in reality, a partial inventory of the physical assets and human liabilities of the nation. A survey of the physical, mental and temperamental health of this group is of great educational, social, economic and public health value.

Such a survey gives some indication of the physical, mental and moral fiber that shows the endurance, persistency and capacity to meet the increasing requirements of modern education. It reveals something of the ability that, in many instances, overcomes social and economic handicaps to push forward in pursuit of high ideals. It serves as a barometer of the failure and success of man to make complete adaptation to the rapidly advancing requirements of a highly artificial civilization and is, therefore, of biologic, racial and eugenic significance.

Such an inventory provides a rough index of the efficiency of child welfare and of the care of children during preschool age. It gives a rather clear insight into the efficiency of the departments of physical education and medical inspection in the schools from which these students come. It gives an indication of the social conditions and the progressiveness and effectiveness of medicine in the various communities in which the students have lived. It is an admirable review of the physical results of competitive athletics on the adolescent. It is a relatively accurate estimate of the proportion of men in the select group available for military service. It reveals the physical defects which handicap the individual, and it justifies itself by increasing his efficiency through correction or alleviation of his condition.

A physical examination is of social and industrial significance. It gives some conception of the suitability of those examined for the various occupations which our complex social organization requires. It teaches the laity the nature and value of a good medical examination, and stimulates interest in hygiene. It

gives the physician an opportunity to acquire greater skill in recognizing potential and incipient disease at a time when prevention and cure are most likely to be successful, to get a broader outlook on disease, learn to anticipate it, and to improve his judgment in the evaluation of early symptoms. It benefits society by lengthening the period of activity of those who, by training and experience, will be best fitted to serve it.

A physical examination reveals something of the size and nature of the task before those who seek to raise the physical status of the population to a level nearer the possibilities of attainment. A periodic physical examination has a monetary value expressible in increased efficiency; prevention of loss of time from work, the saving of the cost of medical attention, and the lengthening of life.

PHYSICAL EDUCATION

If true greatness is determined by ability to serve, to inspire and to lead men to a high social and spiritual destiny, then health, which makes it attainable, has physical, mental and moral aspects. There are few agencies in an institution of higher learning that promote health in this inclusive sense so effectively as physical education. It not only stimulates physical development, but it incites those higher functions and that nobler conduct which lift man above the brute and makes him heroic in evolution. It aims to raise functional power to the highest level consistent with individual capacity. It meets, by correction and gradation, the requirements of the defective, as well as the demands of the normal. It stimulates precise thought and action through its tests and measurements of development, strength, agility, endurance and ability to do. By means of general exercise it produces a symmetrical figure, refinement of body function, and muscle coordination. It creates a fondness for sports and gives the future man of affairs an athletic hobby to keep him in "fighting trim" when the cares of life rest heavily on him.

Physical education is a great antidote for antisocial tendencies. It teaches obedience, cooperation, self-sacrifice, mental poise, loyalty, resourcefulness and initiative. It produces the ability to play the game to the end, whether in the stadium or in the great crises of life. It makes it possible to smile and lose with good will, or to take victory with modesty and magnanimity. It Americanizes and dehyphenizes by the democracy of its playgrounds and by the catholicity of its games. It places the nation on the solid foundation of physical soundness, morality and vitality.

EXTENSION WORK

Universities are doing a great deal to promote personal and public health by the extension service and short courses. The department of household science does much to teach personal and domestic hygiene through its demonstration work in child welfare, home nursing, dietetics, nutrition, and improved methods in home care and management. Short courses in plumbing and heating send many master plumbers back to their business with a new interest in the sanitary aspects of their calling. The result of this training is quickly reflected in the emphasis on the health aspects of their vocation both in their statements and in their advertisements.

Extension service of the agriculture division of colleges and universities is doing and has an opportunity to do remarkable work for the promotion of public health through the farmers and farm organizations. Farm mechanics, with its modern farm home equipment; veterinary departments, with their instruction and propaganda to prevent disease in animals transmissible to man, and the dairy departments, with their demonstrations of the sanitary handling and production of milk and milk products, are all using modern invention and science in the promotion of health and better living conditions. The work done among juveniles, with the girls in the elements of home making, and the boys in farm and community advancement, is, in many of its aspects, hygiene and sanitation in action.

Certain universities of the country have on their administrative staffs men who serve as liaison officers between community needs and the expert advice of the institutions. These men are in intimate contact with the various organizations throughout the state that are working in the interest of public welfare. They are a great unifying force, bringing together all agencies working for civic improvement. As these community advisers not only are keenly sensitive to the current of events but also are experts in promotion, they do a great deal to popularize public health and to interest active organizations in every community in its progress.

THE STUDENT HEALTH SERVICE

A student health service is a health center within an institution of higher learning. It is dedicated to the conception that constructive, dynamic living in the best environment that modern science can provide is the rightful inheritance of every normal individual. To attain this ideal, it strives to teach the student, and by him also his community, the principles of hygiene and sanitation, as they relate to him, to his home and to his vocation. Its methods are the periodic physical examination, the personal conference, the demonstration of disease control, the maintenance of a sanitary environment, the intimate cooperation with physical educators, instruction in hygiene, and the cultivation of an appreciative attitude toward hospitalization and public health administration.

It protects the university population against illness, by early detection and isolation of persons exposed to or ill of communicable disease. It encourages and promotes immunization against smallpox, typhoid fever and diphtheria. It sees that the sick student receives medical attention promptly, to insure the least damage to vital organs and the least loss of time from classes. By advice as to exercise and right living and by referring the students to specially trained physicians, it endeavors to correct the defects in all subnormal students. As students know they cannot conveniently be taken care of when sick at their lodging houses, they expect to go to the infirmary when ill enough to be in bed. Thus, they get used to the hospital and learn its advantages. It will mean much to personal and public health to have our college graduates know that they can usually obtain better care for themselves and their families in a well conducted hospital than at home. Such knowledge will mean much to maternal and infant welfare, to diagnosis, to treatment, and to the equipment and maintenance of hospitals.

The members of the health service staff not only teach hygiene in the classroom and in their conferences with students, but also try to show by example, at every opportunity, the methods employed to prevent disease. A case of diphtheria properly handled in a fraternity house will do more in a few minutes to teach the value of antitoxin, the use of the Schick test, the value of immunization with toxin-antitoxin, the danger of car-

riers and the necessity of isolation, than will several hours of didactic instruction. It presents a demonstration whose significance remains throughout life. It creates a respect for quarantine, and promotes a spirit of cooperation in the prevention of disease.

The health service operates on the campus and in the student district by educating, creating public sentiment, and encouraging a demand for sanitary improvement. It cooperates with the local boards of health, with public spirited citizens, and with students, in helping to bring about the living conditions that make the college community one of the most attractive in which to live. To interest young men and women in the sanitary improvement of their surroundings is to prepare them for better citizenship by their enlistment in the promotion of public health.

CONCLUSION

In institutions of higher learning, there is a great opportunity to create an intelligent public sentiment appreciative of the social, economic and health value of scientific medicine. Informed and alert community leaders will not only demand the service of well trained physicians and sanitarians, but will also provide better facilities for teaching medicine, better equipped hospitals, more full-time health officers, and laws adequate to protect the public and those who truly serve it.

ABSTRACT OF DISCUSSION

DR. J. J. MCSHANE, Springfield, Ill.: We hope that the time is not far distant when, in every grade, high school, college and university preventive medicine will be taught as it should be; teaching first the child, then the adolescent population; first the facts concerning the person, then the general practice of hygiene. There is an opportunity for a real health program in our teachers' colleges. The young men and women students in these colleges should be given a thorough training in general hygiene. There is a great opportunity in colleges and universities of higher learning to reach many who, when they leave their alma mater to go back to home communities, can be of great help in forming and crystallizing sentiment in regards to health programs. At present in Illinois there is a need for better health administration in smallpox in cities and rural sections of the state, and there is an opportunity for schools of higher learning to further the cause of better health administration. The county would also be the logical unit for rural health administration with a full-time medical health officer directing the work of the county health department. As it has been said, we stand today at the door of opportunity, and on us of this generation has been imposed the duty of laying the foundation of a new epoch. It is true that other and better men have gone before us and we enter into their labors as other and better men will follow us and enter into ours. But our responsibility is none the less sure. Knowledge, clearness of mind, broad vision, strength of will, sympathy of heart have been in the past and they will be in the future, the inspiration of all high human endeavor. As a student and a workman I am aware that in order to reach their fulfilment the science or art of preventive medicine needs the same inspiration. No far reaching medical reform is separable from social reform, which in its turn finds its source in the highest aspirations of the people.

DR. W. A. EVANS, Chicago: We have no information as to the prevalence of goiter in Illinois, except as that has been furnished by the reports on students at the university. These reports give us a fairly good cross section of goiter in Illinois. I wonder how many health departments make use of the students health department of their state university for the purpose of getting surveys of cross sections of certain parts of the population at least? I have charge of student health work in a medical school where the student body is away from the general student body of the university. When we began this work two or three years ago, I was interested in finding out what was done for the health of medical students who were not in touch with the general student body, who were not on the campus and did not come under the rules and regulations and general methods of procedure that apply to the general student body. I was surprised to find that, when it came to doctors in the making, student health work did not apply unless the medical students happened to be members of the general student body. If the student was along with law, agricultural, and engineering students, all right, the university would look after him; but if he was just a plain, everyday medical student not on the campus, it did not. We justify the existence of the universities because they train for leadership. A function of the student health work in the university is to train the student there for leadership in health matters. If it is important for students of agriculture, law, and engineering, to be trained in health leadership, it it ten times more important for students of medicine to be so trained. It is regrettable that medical students so frequently miss the opportunities for training in health which student health work gives.

DR. A. M. STIMSON, Washington, D. C.: One feature that ought to be emphasized, is that the great bulk of our children are not going to college and not even to high school; many of them are not going through grammar school. They are being taught by a group of young women who are filling in time, not expecting to make teaching their life work. These young women usually do not know a thing about hygiene or health, or public health. The children ought to be instructed by teachers who do know something about these subjects.

DR. ISAAC D. RAWLINGS, Springfield, Ill.: I agree with Dr. Stimson. We arranged recently to give a course of lectures at the normal school in DeKalb, and we have started machinery to give lectures to the future teachers in Illinois at other state normal schools. We think that these courses are very important, as we know that the teacher can do very much, if properly instructed, while she is getting education in normal schools, in safeguarding health and cooperating with all health activities when she does become a teacher of these children, many of whom will never reach the universities.

DR. H. S. MUSTARD, Murfreesboro, Tenn.: In regard to the wonderful avenue for health teaching in normal schools, I happen to know that this is being taken advantage of generally throughout the United States. As medical men we should bear in mind the danger of stressing method more than content in these schools. I fear that those in the general educational system feel that they are able to get content without much effort so long as they observe method; and I think that the medical men and health men should guard against this. It has sometimes been said that teachers' colleges turn out teachers to teach subjects of which they are ignorant. We should bear in mind that those teaching in normal schools must have proper scientific background and knowledge.

PROF. I. V. HISCOCK, New Haven, Conn.: Until the opportunities are more fully realized of teaching public health and preventive medicine through various other courses than those directly labeled "public health," we will not accomplish the fullest results. In the institution with which I am connected we have observed a definite change in the last two or three years in the attitude of medical students toward public health work. The interest and activity of instructors who are connected with the departments of pathology, pediatrics, medicine, etc., has undoubtedly been an important factor in bringing this about. The student is encouraged to consider preventive as well as curative measures.

DR. J. HOWARD BEARD, Urbana, Ill: Preventive medicine will be making a great advance when future teachers graduating from institutions of higher learning take with them a knowledge of the relation of public and personal health to success in their profession. Through the health service with its physical examinations, conferences, advice and instruction in hygiene, universities are emphasizing the importance of health to the individual and to his vocation. Departments of physical education are promoting the positive side of health by developing in each student constructive, physical, mental, and social qualities. Emphasis on hygiene in the courses of athletic coaching will make the future athletic director a force in his community for the advancement of public health.

AIMS OF DIVISION OF INDUSTRIAL HYGIENE OF NEW YORK STATE DEPARTMENT OF LABOR*

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Perhaps no one will dispute the statement that activity within the limits of good health is, in the long run, economically productive, and that activity outside these confines is not only unsatisfactory but tends to ill health and inferior or expensive production.

In the state of New York, there are sanitary and hygienic laws governing the conduct of industry, which are designed to protect both the employer and the employee. These laws are administered by the state labor department through several bureaus and divisions, not the least important of which is the Division of Industrial Hygiene.

Although an enormous amount of research has been made into both the hygienic and the medical problems which have been introduced by industrial conditions and processes, and although much more remains to be done along these lines, certain points are becoming clear. For example, atmospheric conditions have been found to be of first importance; a temperature for physical work varying between 55 and 65 F. is associated with the largest output and the fewest accidents. It has also been found that the conditions for every one are most favorable when there is some variation in the temperature and some air movement. Lighting has been shown to affect industry, since production will fall off and accidents and fatigue will increase when the lighting intensities are allowed to drop below a certain limit. On the other hand, there is more to be accomplished in making a study of the relation of improper ventilation, noise and odors to industrial output, both within and without the confines of good health and economy.

All these influences should be studied with a view to improvement, until no further effect can be produced in the health and output curve. Then, to make further improvements possible, the employment periods and rest pauses should be adjusted until something approaching a reasonable and common sense standard is attained. When that is accomplished every one concerned should be allowed to go on in peace and enjoy the resulting benefits.

This problem, taken as a whole, can be solved and standardized under regulations that would be acceptable to both the employer and the employee, but both must be willing to cooperate and to trust some one.

Now, the question is, who is that some one whose decisions as to the problems in industrial hygiene both the employer and the employee will be willing to trust and then to follow? This "some one" will naturally be the consensus of opinion, appropriately obtained, from medical men, public health experts, hygienists, bacteriologists, chemists, sanitary engineers, physicists, physiologists, psychologists, mechanical engineers and civil engineers. It cannot be otherwise when the scope of the conditions to be standardized are considered, which, besides physical examinations, include ventilation, heating, lighting, noise and vibrations, relief of workers, posture, protective apparatus against dusts and fumes for workers, and safety devices.

Why cannot the employer and the employee let their case rest with the state in the industrial hygiene division of the New York State Department of Labor? The division is prepared to deal with the situation since its recent reorganization and expansion by the present industrial commissioner, Hon. Bernard L. Shientag, and, when necessity arises, the personnel can be increased accordingly. The present complement includes trained medical inspectors of factories, chemists, chemical and mechanical engineers, expert designers of protection devices for machinery, and men trained in the problems of lighting and ventilating.

Industrial hygiene, as a branch of medical science, is becoming stunted in its proper growth and development, because not enough use is being made of the knowledge that is easily available and that could be applied by especially trained physicians or regularly qualified medical inspectors of factories. The greater part of the results of the vast volume of research work in the field of industry has been accomplished by highly qualified specialists, but these specialists are never available to apply their teachings. They write their reports and conclusions, and then attack the next problem. This is as it should be. Why waste an expert on simple administrative details? The application of the doctrines of industrial hygiene should be applied only by one type of person, and that person is the highly qualified medical inspector of factories.

This type of physician must be made or developed. He must not only have had practical and clinical experience in the diseases caused by industry, and in the general field of medicine, but he must also be familiar with factory conditions and possess a knowledge of industrial processes, as well as an understanding of the manners, customs and psychology of workers in general. Where will such a paragon be found? is the question that both employer and employee will ask; and it is a natural question, too. The answer is this: The right type of medical inspector of factories can be picked here and there, with all of the qualifications enumerated, but the salary that the state now offers would not attract him unless he possessed private means. The industrial hygiene schools of the leading universities are graduating doctors with the right scientific qualifications and it only remains for the Division of Industrial Hygiene of the New York State Department of Labor to train them in practical factory work. In time, they would develop sufficient experience to be trusted with industrial hygiene problems, and, if they could show good technical training and such qualifications as common sense, judgment and discretion, they would satisfy the interests on both sides of the questions to be referred to them.

The principal functions of a medical inspector of factories in the New York State Department of Labor are:

1. The investigation of complaints made by factory inspectors and others relative to conditions in factories which fail to comply with the requirements of the New York State Labor Law.
2. Making written and detailed reports of all investigations and recommendations whereby the unhygienic or dangerous conditions found can be corrected or eliminated.
3. The investigation of dangerous trades and physical examinations of workers employed therein, to determine the effect on the health of the workers.
4. The investigation of industrial diseases reported by private physicians, hospital physicians and factories.
5. The supervision of child labor in factories and mercantile establishments.

* Read before the Section on Preventive and Industrial Medicine and Public Health at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

The conditions in industry to which the attention of the medical inspector of factories is most frequently directed are:

(*a*) Exposure to irritating or poisonous fumes or gases.
(*b*) Handling of poisonous or corrosive substances.
(*c*) Inhalation of vitiated or impure air.
(*d*) Extremes of humidity or temperature.

In addition should be mentioned the conditions with which the so-called "industrial diseases" may be confused, such as tuberculosis, arterial or cardiac diseases, nephritis, syphilis and alcoholism. For example, the paralysis of lead poisoning may require differentiation from that of alcoholic neuritis or poliomyelitis; the cachexia of lead poisoning, from that of tuberculosis, nephritis, or carcinoma, and likewise the blue line on the gums of lead poisoning from the ordinary congestion secondary to gingivitis and pyorrhea alveolaris.

In order to determine the condition of child labor in factories, the services of qualified medical examiners are necessary. The following conditions must be noted in each child examined to determine whether an employment certificate should be issued: (*a*) presence or absence of anemia; (*b*) state of the glands in the neck; (*c*) condition of the tonsils; (*d*) presence of adenoids; (*e*) condition of teeth; (*f*) condition of heart and lungs; (*g*) physical development; (*h*) mental condition; (*i*) hearing; (*j*) visions; (*k*) presence of infectious or contagious diseases.

In the course of the medical factory inspector's work might come numerous chemical examinations of dust and wall and floor scrapings obtained from various factories, to determine the presence of different poisons, such as lead and arsenic; and, on the other hand, the analysis of urine obtained from workers whose appearance might suggest lead poisoning would be made to determine the presence of lead. Microscopic examinations of blood obtained from these workers are also made to determine the stippling of the red cells, which, when considered with other findings, give an absolute diagnosis of lead poisoning.

It will be seen that the function of the medical inspector of factories is not only to make a diagnosis by clinical and laboratory observation, of the condition from which a worker is suffering, but also includes establishing the fact that the worker developed the condition in the factory. Likewise, in the case of the examination of children in factories, since the state demands that all children before obtaining employment shall be of suitable age, in possession of adequate education and in good physical condition, the physical examinations of children can therefore be performed only by medical inspectors who have been specially trained for this work.

There is one point that should be settled here. The functions of the medical inspector of factories should not be confused with those of the factory inspectors in the Factory Inspection Division. The latter are charged with a different type of work involving violations of the labor laws, enforcement of labor laws regarding the hours of labor, prohibition of certain employment, safeguarding of machinery, fire protection, etc., but their duties are frequently associated with those of the medical inspectors of factories. Indeed, it frequently happens that the combined efforts or talents of the medical inspector of factories and the factory inspectors are required to produce certain results contemplated by the New York State Labor Law, results which could not be produced by any other means.

It is realized that the mere mention of "medical inspector of factories" is likely to bring forth three sets of reactions, the first from the medical practitioner, the second from the employer and the third from the employee.

1. The medical practitioner, whether he is a full or part time physician to an industrial plant, or is simply consulted from time to time by persons suffering from industrial diseases or accidents, naturally wonders whether such a scheme would interfere with or prove an embarrassment to him. The answer to this is, No, decidedly not. On the contrary, the medical inspector of factories would never undertake to treat these patients, but, with his special knowledge of industrial diseases, he could aid the plant physician or general practitioner in many ways as a consultant in investigating the previous history of the patient and in determining diagnosis and treatment. Furthermore, and this is important, the services of the medical inspector of factories could be obtained without expense to any one concerned.

2. The employer pictures in his mind the medical inspector of factories as a "doctor" who, in the first place, is entirely nonconversant with industrial conditions, handicaps, difficulties, competition and workers, and who is not interested in the employer's side of the case, in any event. He sees in the medical inspector of factories a "doctor with police power," who is desirous both for his reputation and for a record of finding something wrong on which to make a report or to write a paper. He feels that the "doctor" comes to "stick his nose" into the business affairs of the factory, even if he does not learn some of the secrets of the processes of manufacture in his desire to ascertain whether the agents used are detrimental to the health of the workers. He feels that, in any event, the medical inspector of factories is prejudiced against him and is in favor of the labor department. If the employer has a large plant, he has his own medical department and policy, and he resents interference. He feels that his own medical men are more conversant with his own conditions than any outsider could be. It is really a natural view for the employer to take and a perfectly sound view, if the medical inspector of factories is not to possess the requisite qualifications referred to above.

3. The employee pictures in his mind that he is to be called on unexpectedly and without preparation to remove his clothes for a physical examination. He considers this a nuisance, to say the least, but he especially resents the possibility of the medical inspector discovering some disease that will disqualify him for his work and will end in his losing his job. If he is a piece-worker, the loss of time for the examination is a special cause for objection. To dispose of this objection, let it be said that no worker over the age of 16 years can be examined without his or her consent. At the present time, the medical inspectors of factories are examining workers. Every Saturday afternoon, workers appear at the Industrial Hygiene Office of the New York State Labor Department for examination. Then, too, in connection with certain investigations that are being made, the medical inspectors visit plants and state that they are ready to examine any workers who are willing. Some consent, some refuse, some are indifferent, some are eager to be examined. The results of these examinations are beneficial to employers and employees alike in that they are usually followed by some result favorable to the general health of the employee.

If the employers and the workers would cooperate, it would be possible to organize gradually a corps of industrial hygiene experts in the New York State Department of Labor to whom medical men, employers and employees could refer their problems, with a result that in time, the regulations or procedure governing the hygiene of industry could be modified or adjusted to suitable standards. With this evolution, the workers could be educated to a point at which they could produce within the limits of good health to the best advantage of all concerned, and many of the present discrepancies in accident and health compensation could be adjusted. These are the aims of the industrial hygiene division.

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ABSTRACT OF DISCUSSION

DR. T. R. CROWDER, Chicago: It is very gratifying to know that a great industrial state like New York is preparing to contribute something to the health of industrial workers beyond the accumulation of more laws. There are already too many of those. We need, not only in New York but in other places as well, some definite leadership by governmental authority in the application to particular problems of industrial hygiene of the knowledge that is being accumulated by research workers in that field. One of the difficulties that have been encountered in the practice of industrial medicine is the indefiniteness of our knowledge of its various problems and the difficulty of getting authoritative advice in its application. It strikes me that one of the very important functions of such a division as that which Dr. Cofer is conducting is the educational and cooperative function of bringing to the attention of industrial physicians and industrial managers the definite and specific knowledge that will enable them to conserve the health of the worker and thereby to contribute to the economic advantage of the industry and the community. Dr. Cofer has outlined a good program to this end. I am sure we all wish him success in its application.

DR. F. L. RECTOR, New York: If industrial hygiene is to be successful it must be practical and must meet every day needs. It must be elastic in order to fit local conditions. For this reason, I doubt the advisability at this time of attempting too rigid standards for employment, rest periods and related considerations having to do with the productive activities of workers. Each of these problems has to be worked out in the individual factory after prolonged research, much more than has yet been given to these subjects. I cannot agree entirely that the application of the doctrine of industrial hygiene should be applied only by one type of person, and that person the highly qualified medical inspector of factories. I fear Dr. Cofer is overlooking the immense usefulness of the plant physician, who largely fulfils conditions laid down in this paper as the type of person best qualified for this work. The plant physician has a daily contact with the intimate workings of the plant and knows them as no inspector can know them who comes into a plant for a short time only and, by reason of this intimate contact, is more able to know and apply practical remedies for unsatisfactory conditions. The state official with police power is always handicapped by mandatory legislation which prevents him following an investigation beyond a certain point, and his efforts must cease when the conditions complained of have been corrected to comply with the provisions of the law. I do not believe that this source can be depended on for many trained workers; not that the schools are not equipped to teach this subject, but because physicians and sanitarians have not seen the possibilities for a professional career that lie in this direction. The largest contributions to the duty of industrial medicine have come from plant physicians. Industrial management has taken a large interest in the application of industrial hygiene and preventive medicine to factory problems, and is cooperating and will cooperate to the fullest extent in this work when it is convinced that practical methods have been developed. The doctor has outlined an interesting field of research for the medical factory inspectors, but as this work grows I think he will need to divide his forces into those in the field gathering information, the true factory inspector, and the laboratory group, which must take this information and the materials collected and make the scientific analysis. I agree that the work of the medical inspector of factories, the same as the work of the plant physician, is, or should be, one of cooperation with the private practitioner. I think it is generally conceded that the physician in industry should confine his activities in the main to the treatment of such cases of accident or illness as occur within the plant or are due primarily to the workmen's occupation.

DR. EMERY R. HAYHURST, Columbus, Ohio: One of the things we have to keep in mind is that probably 80 per cent. of workmen are in small plants which have no medical service whatever and probably will not have for many years to come, except as such may be organized for several plants together by some physician in that community. If we could have for this 80 per cent. of workers the health organization that now obtains for the other 20 per cent., we would be far ahead of where we are now. Because of the apathy of the medical profession, especially the recent medical graduates, as well as the medical student toward this field, we started a little experiment—I might call it that—in Ohio State University the last quarter. With another group of students, on the invitation of the dean of the college of engineering, we put on eleven lectures and three examinations on "Industrial Health" as an elective course for senior engineers. The course was elected by forty-five engineering students. The idea of the course was, first, to show its humanitarian aspect to those who are ultimately going to be plant managers, and, secondly, the economic aspect of the question, for which we now have figures—we know that engineers like figures. The same thing has been done in a small way in other departments of the university, where men are taking special courses in these directions. These men are much more interested in this whole subject than are medical students. If our medical students take any work whatever in our industrial health courses it is usually while they are still in the university; the medical curriculum itself is so crowded that they cannot get it in as a rule after entering the medical college. But the medical graduate, when offered a course of this description or a post-graduate course in industrial medicine consisting of courses which are carefully selected from the entire curriculums of the university, after a two years' experiment has shown no interest in such work. This is the result even though we encouraged half-time connections with local plants which would pay their expenses during the year's specified work. There is something the matter, therefore, with this angle of the case. Now, let us look at the other side. Managers write to the university for physicians to be recommended from among the younger men. We are telling them that we have none and that probably we shall have none until they insist that these young physicians shall have had some special instruction for such work. We also point out to them that some establishments have even gone so far as to take physicians whom they have already employed and send them to institutions to get the proper training. Thus we see there is a disinclination to take training if jobs can be had without it; but present experience shows that this situation is gradually changing and that establishments want physicians who also have "a social point of view" and can see things "in the mass." The times now look propitious both for the special courses offered in industrial health training and for the actual practice of industrial hygiene and medicine in this country.

DR. FREDERICK L. HOFFMAN, Newark, N. J.: Dr. Cofer has raised one of the most important questions affecting American industry. The state laying down statutory requirements as to what industry must do will look for the enforcement of these requirements by men who are generally not trained in what they are expected to do. We need in this country precisely what Dr. Cofer has in mind, a medical factory inspection service, based on a thorough understanding of industrial conditions inimical to health. The current medical course is totally unsuited for such a purpose. The clinical teachings really never come into play in the enforcement of factory hygiene and factory sanitation. The physician himself becomes restless because he is not practicing

medicine as a healing art, for which he was trained, since industrial medicine has very little to do with the practice of prevention in the accepted sense of the term. The prevention of industrial disease involves a totally different method of procedure than the prevention of death from disease in medical practice. What we need is physicians trained in industrial medicine who really know what is going on. We need such physicians to aid in an effort to eliminate all conditions in industry which are opposed to the highest degree of industrial efficiency and the attainment of the longest and healthiest life possible. As Dr. Hayhurst has said, small plants are decidedly more objectionable as regards attention to industrial hygiene than the larger plants, which, generally speaking, are today in a satisfactory condition. In my investigation of the health conditions in the printing trades, I have found that among 100,000 workers there occurred during 1922 some thirty cases of recognized lead poisoning. In the United States registration area, during the five years ending with 1922, the record shows thirty deaths from lead poisoning among printers out of a total mortality from chronic lead poisoning given as 611. The number of physicians who are really competent to diagnose cases of chronic lead poisoning in its earliest stages are surprisingly few. On the continent of Europe there is a whole army of medical men who represent the highest type of medical efficiency trained in industrial hygiene and factory sanitation. We know nothing of such men in this country, and it is sincerely to be hoped that Dr. Cofer will be successful in bringing about a thoroughly efficient medical factory organization in New York state. We need such an organization for every state in which industry is of the first importance. We never needed it more than at the present time if the health of our workers is to be safeguarded properly. Much progress has been made in this direction and the outlook for the future is unquestionably encouraging, but we need an aggressive state policy such as Dr. Cofer has outlined, which it is sincerely to be hoped he may realize during the next few years. His address presents a splendid conception of the medical supervision of industry, which, if adopted, will place the state of New York in the front rank of modern governments, seriously concerned with the pressing question of labor welfare.

Dr. Alice Hamilton, Boston: The small places will never have a plant physician; they are too small. There must be some one to tell the company in that plant what to do, and that person must have had a medical training. The plant physician necessarily knows all about his plant and seldom knows about any other, and the knowledge that he has does not spread to the other plant. A little while ago I was taken over an extremely bad white lead factory by the physician in charge. He showed me things he ought to have been ashamed of, and he did not know that what he was showing me had been discarded by the good plants ten years ago. A medical inspector would know what was the practice in the best plants. He would describe them and so spread the knowledge. I think that the most important thing is the publicity end. We have few articles on industrial health. What is the source of our knowledge on these questions? The great medical factory inspectors of Great Britain and the countries on the continent who have spent their lives in the plants. The plant physician is obliged by law to send his report to the home office, and he does not look on the home office as a socialistic or bolshevistic effort on the part of the government, and when in a tight place he expects the experts from the home department to come and help him out. It is a splendid cooperative field, and as a result the public and industry know about it. The plant physician, as a usual thing, may not publish what he knows. Our chief topic of conversation is how we can get the plant physicians to tell us what they know. We have about given it up as a bad job. It is hard to get them to tell anything at all. We ought to get a great wealth of material from them. If we had medical factory inspectors, perhaps we could begin to pool our knowledge and that is what we need.

Dr. Leland E. Cofer, New York: Dr. Rector especially has given me an opportunity to clear up several points which I should have mentioned more in detail. First is the question of politics as applied to the so-called prospective trained medical inspectors of factories. I can only say that at the present time every person in the Industrial Hygiene Division of the New York State Department of Labor is under civil service and was appointed only after a competitive examination. The Industrial Commissioner, Hon. Bernard L. Shientag, has been especially interested in the work, and I have not seen the slightest indication of political interference of any kind. Dr. Rector, I think, has formed the impression that I differentiated between plant physicians and other physicians in connection with the project of forming a corps of trained medical inspectors of factories. Under the heading of medical profession I included all physicians, for there is no reason why certain plant physicians might not find it more interesting to leave an individual plant and join us in studying industrial diseases on a broad scale. Another point Dr. Rector brought up bore on the amount of collateral knowledge we expected these expert medical factory inspectors to possess. As we have well qualified mechanical and chemical engineers, we do not expect them to be versed in technical mechanics or chemistry. In regard to Dr. Rector's inquiry as to the line of investigation that we are going into, I have to say, that this has not been decided. Before a general investigation is started, the whole question will be referred to the advisory board of the industrial hygiene division. This board comprises such men as Dr. Gilman-Thompson of New York, who is chairman; Dr. Matthias Nicoll, commissioner of health of New York state; Dr. Orrin Wightman, president of the New York State Medical Society, and Dr. Charles Dana, chairman, Public Health Committee, New York Academy of Medicine. I believe that the difficulty of finding the proper type of men to go into this corps is fully appreciated when I say that in discussing the matter in Boston with Dr. Edsall I was informed that he had only one such man in mind at the time, and that it would probably take him two years to find me ten such men. I also realize that it will not be easy to obtain the proper type of physician for this work at the salary now being paid by the state. But these are difficulties which we are here to remove, if possible, and I can only say that we cannot begin any earlier than today to remove these difficulties. Dr. Rector touched in some way on accident prevention, and I have forgotten exactly how he approached this subject. I should like to say, however, that our division is so organized that one section of it deals exclusively with accident prevention from a medical as well as a mechanical standpoint.

GASTRIC SECRETORY DISTURBANCES*

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For many years, gastric analysis has been a procedure utilized by physicians as an aid in the diagnosis of gastric disorders. Introduced to the profession in a practical way about 1870, it has been used more or less generally ever since. In its early history the analysis was not extensive, aiming chiefly to determine the degree of acidity. Later, attention was also given to the estimation of pepsin or peptic activity. Somewhat later, more extensive analyses were made, of which that of Hayem and Winters is typical, but they were not practical, and except in the more completely equipped laboratories could not be satisfactorily made. Following this, the tendency was toward simplification, until the only result of the analysis considered by the clinician was the degree of total and free acidity at about one hour following the injection of the test meal. Macroscopic and microscopic examinations were largely neglected.

Very frequently, on the results of this more or less carefully obtained analysis, a diagnosis might be made.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

It is not difficult to recall when the absence of free hydrochloric acid in a chronic illness with some digestive symptoms would be considered very suggestive of malignancy; while, on the contrary, if the acidity was high, a diagnosis of peptic ulcer would probably be made. This empiricism tended to lessen the confidence of the profession in the procedure, and many excellent clinicians were inclined to discontinue it as a routine examination in gastro-intestinal disorders, reserving it for a few selected cases. While in all probability pathologic changes in an organ practically always disturb its function, it is not, conversely, always true that disturbed function indicates pathologic change. In discussing chronic gastric ulcer, Moynihan [1] expressed himself as follows, and his opinion was shared by many others:

> Of the chemical examination of the stomach contents I do not speak with any enthusiasm. For several years my patients were submitted to this form of investigation, but I cannot think that the evidence thereby obtained enabled a greater accuracy to attach to the diagnosis or justified the increased trouble it gave them. Hyperchlorhydria is present in so many other diseases than gastric or duodenal ulcer that its presence does not offer positive or even contributory evidence of any real value. . . . For reasons connected with the war I have rarely submitted patients to this form of inquiry in the last four years, but it will be interesting to discover the relationship, if any, between the degree of gastric acidity and the quality and duration of the gastric spasm due to extrinsic as well as intrinsic cases.

THE ADVANTAGES OF FRACTIONAL GASTRIC ANALYSIS

In 1914, Rehfuss [2] and his associates brought to the attention of the profession the fractional method of gastric analysis, recommending it as a decided improvement on the Ewald method then generally in use. While the fractional procedure had been previously used in a small way in this country and a little more extensively abroad,[3] it had not been so accurately described or its value sufficiently stressed but that Rehfuss and his associates should have the credit, at least in this country, of being the first to propose the method in a practical way. The opportunity of studying the gastric function during the interdigestive phase as well as the digestive phase is so much more satisfactorily accomplished by the fractional method, using the Rehfuss or Einhorn tube, that this alone would recommend its use. Although the fractional method has had many critics, few would now question its superiority over those previously used. Moynihan,[4] the author quoted above as expressing so much doubt as to the advisability of the gastric analysis, later expressed himself as follows:

> An additional method of inquiry which we follow in the great majority of cases consists in the examination of the gastric contents by the fractional method of Rehfuss. In my earlier experience I had several hundreds of cases examined after an Ewald test meal, but I found that so little helpful information was given, at so great an expense of time and trouble, both to the patient and to ourselves, that I was glad to abandon the procedure altogether. The new method, which we have used for over a year, is more rational and has been most informative.

Since it is not the purpose of this paper to discuss in detail the advantages of the fractional method over the single specimen analysis, I will not attempt a detailed discussion, as so much has been contributed to the recent literature from so many sources as to leave little doubt of its advantages.

VARIATIONS NOTED FROM DAY TO DAY IN THE GASTRIC SECRETORY FUNCTION

In accepting the findings of a carefully made analysis, certain reservations must be kept in mind. It has been found that there is quite a decided variation in the functional behavior of the stomach from day to day in the normal person, and probably much more in the patient suffering from some pathologic condition. This was noted carefully in a recent article by Bell and McAdam,[5] and earlier by Bennett and Ryle,[6] Rehfuss, Bergheim and Hawk [7] and others. In our series of analyses conducted on apparently healthy young women, using the same test meal under as nearly similar conditions as possible at weekly intervals, the same variation was noted as mentioned by Bell and McAdam. We might mention that there was a similarity in the graphic curve from time to time, but a decided difference in the acid values. In all probability, the result of the first test is apt to indicate lower values for total and free hydrochloric acid than will be found on succeeding examinations, and a retest should be made a few days later in all cases showing marked deviations from the normal.

The variations noted when the test meal is repeated from time to time, both in the apparently normal person and in those suffering from a possible gastro-intestinal disturbance, are not easy of explanation. Psychic influences or functional nervous disturbances, particularly in the invalid, are no doubt very important factors in disturbed gastric secretion. It is sometimes difficult to determine just how this occurs through a disturbance of the nervous mechanism, and it is a problem requiring further investigation. In debilitated conditions resulting from acute or chronic illnesses, we are very apt to encounter a hypochlorhydria or an achlorhydria that may disappear with the improvement of the patient. Diseases in other organs affecting the gastro-intestinal tract reflexly, previous dietetic indiscretions or excessive indulgences in alcoholic beverages or irritating condiments are all well recognized factors that may decidedly alter the functional behavior of the stomach at any given time. Moreover, motor disturbances of the stomach incident to disturbed pyloric function are a factor which, in affecting the acid values of the gastric juice, has been decidedly ignored.

EXCESSIVE GASTRIC ACIDITY OR HYPERCHLORHYDRIA

Probably the one finding from gastric analysis that has previously been of greatest interest to the physician has been hyperchlorhydria, or an excess of total and free hydrochloric acid. A large number of physicians consider that the presence of a high acidity with disturbed digestion is a basis on which a diagnosis of gastric or duodenal ulcer may be made. It has been observed that this condition occurs frequently in duodenal ulcers, cholecystitis, chronic appendicitis and certain nervous disturbances. The cause of hyperacidity has not been satisfactorily explained in these conditions, but it has been generally accepted that it was due to a secretion of greater acidity from the acid cells in the gastric mucosa.

1. Moynihan, Berkeley: Brit. M. J. **2**: 765 (Dec. 13) 1919.
2. Rehfuss, M. E.: Am. J. M. Sc. **147**: 848, 1914.
3. Ehrmann, R.: Deutsche med. Wchnschr. **38**: 89, 1912.
4. Moynihan, Berkeley: Brit. M. J. **1**: 221 (Feb. 10) 1923.
5. Bell, J. R., and McAdam, W.: Am. J. M. Sc. **167**: 520 (April) 1924.
6. Bennett, T. I., and Ryle, J. A.: Guy's Hosp. Rep. **71**: 286 (July) 1921.
7. Rehfuss, M. E.; Bergheim, Olaf, and Hawk, P. B.: Gastro-Intestinal Studies, J. A. M. A. **63**: 909 (Sept. 12) 1914.

Carlson[8] attempts to explain the so-called hyperchlorhydria on the basis of a hypersecretion secondary to pyloric obstruction and gastric retention, with a prolonged secretory response to foods. He further states that a gastric juice of greater than normal acidity has not been demonstrated in any disease, and that the pathologic deviation in acidity is always toward an anacidity. Boldyreff[9] calls attention to the fact that the normal secretion from the gastric glands is not 0.2 per cent. of free hydrochloric acid, but rather 0.4 per cent.; that while it more frequently is found in the gastric juice of the normal person at about 0.2 per cent., the reduction is due largely to dilution and neutralization from the saliva and slight neutralization by the alkaline gastric mucus, but chiefly from the regurgitation of the alkaline secretions of the duodenum. Bolton[10] would explain the high acidities on the basis of temporary or permanent pyloric obstruction, which prevents the regurgitation of duodenal contents, and which he believes to be the natural regulator of gastric acidity. While this idea is not entirely new, his method of demonstrating it by the careful analysis of chlorids with careful estimation of the total, inorganic and organic chlorids adds some weight to his statement, and his conclusions seem very convincing.

A careful review of our cases would warrant the conclusion that in gastric or duodenal ulcer or extragastric disease accompanied by so-called hyperacidity, gastric delay due to pyloric spasm or stenosis of organic basis can practically always be demonstrated by roentgen-ray observation, and in cases in which this does not obtain there is practically no greater percentage of hyperchlorhydria than in a similar number of normal persons. This would seem to agree with Carlson, who states that in patients suffering from gastric and duodenal ulcer uncomplicated by pyloric obstruction, the secretory conditions are not unlike those found in normal persons, and in his opinion gastric and duodenal ulcers do not per se alter the activities of the gastric glands. Moynihan[4] states that in nearly 50 per cent. of his proved cases of gastric ulcer the Rehfuss chart showed a subnormal curve, while in 72 per cent. of duodenal ulcer cases there was a hyperchlorhydria. In our cases, 73 per cent. showed a hyperchlorhydria, which would indicate that, as there is less apt to be disturbances of the motility incident to pyloric malfunction in gastric than in duodenal ulcers, the greater frequency of hyperchlorhydria in the latter could be very legitimately explained on the basis of disturbed motility. I am convinced that hyperchlorhydria is much more suggestive of motor disturbance with a resulting hypersecretion than of any definite disturbance of the secretory mechanism.

ACHLORHYDRIA OR ACHYLIA GASTRICA

The presence of an achlorhydria or a marked hypochlorhydria is a symptom, from the pathologic standpoint, of much greater importance than a hyperchlorhydria. The correct determination of this is, I believe, the most important use of the fractional gastric analysis. Hurst[11] emphasizes the necessity of a fractional analysis in preference to the analysis of single specimens, as he shows that in their series of cases an error of 9 per cent. would have been made had they accepted the findings of the Ewald meal. He states that out of 325 consecutive fractional test meals, complete achlorhydria was present in thirty-four (10.5 per cent.) cases, and free hydrochloric acid was absent from the one hour fraction in thirty (9.2 per cent.) additional cases, in twenty-two of which it was absent also from the resting juice and from the three-quarter hour fraction, although free acid was present at other times during the meal.

In reviewing our cases for the first three years, in which the fractional method was used in 2,730 cases, I found 276 cases, or 10 per cent., of complete achlorhydria, and in addition 222 cases, or 8.5 per cent., in which there was no free hydrochloric acid for the first hour. These findings agree very closely with those reported by Hurst. Moreover, a review of 2,399 cases in which the Ewald test meal was used, the contents being withdrawn at the end of one hour and fifteen minutes, showed a complete absence of free hydrochloric acid in 533, or 18 per cent.; so there appears to be reasonable ground for believing that the Ewald test meal is not an accurate procedure for determining achlorhydria. I employ the term "achlorhydria" in preference to "achylia gastrica," as I find very few cases to be typical of achylia gastrica, if we accept the common understanding that achylia means a total absence of free hydrochloric acid and pepsin. In a series of 220 cases of achlorhydria, I found a complete absence of free hydrochloric acid and pepsin in only thirty-four, or 15.4 per cent.

Very frequently cases come under our observation giving symptoms somewhat suggestive of ulcer. The patient has noticed some relief from alkalis, which have usually been prescribed by his physician from a symptomatic standpoint without resorting to gastric analysis. The same pateint may have been subjected to roentgen-ray examination and with results strongly suggestive of duodenal ulcer. A fractional gastric analysis in these cases may reveal a complete achlorhydria. The roentgenologist's findings of a deformed duodenal bulb may have been correct, as frequently these patients have suffered from some right upper quadrant inflammation, resulting in a deformity of the duodenal cap incident to adhesions and sometimes simulating the deformity of duodenal ulcer. It is possible that had a more careful history been taken the error could have been avoided, as the persistence of symptoms in chronic gastritis is not particularly suggestive of a duodenal or gastric ulcer. It is not impossible to have a gastric or duodenal ulcer with an achlorhydria, but it is unusual and, if so, is a rather hard blow at the corrosive theory as a factor in the prevention of the healing of the ulcer. In these cases, it is more probable that we are dealing with a gastritis secondary to an achlorhydria or achylia gastrica in which the absence of gastric secretion has permitted irritation of a chronic character. These cases usually respond very promptly to the use of an artificial gastric juice with an extremely bland diet, necessary on account of the extremely irritated condition of the gastric mucosa.

Since in severe anemias and particularly in primary anemia, we have an achlorhydria, and since it in all probability precedes the anemia rather than being a result, it is most desirable that it be discovered as early as possible. In a number of our primary anemia cases, a diagnosis has been made before any anemia developed, the diagnosis being made on the achlorhydria, glossitis, and slight paresthesias in the fingers suggestive of spinal cord changes. Hurst[11] and others have called attention to a finding relative to the frequency of achlorhydria in the immediate family of primary anemias,

8. Carlson, A. J.: Physiol. Rev. **3**: 1 (Jan.) 1923.
9. Boldyreff: Arch. d. sc. biol. **11**: 1, 1905; Internat. Beitr. z. Path. u. Therap. d. Ernährungsstor. **100**: 331, 1915.
10. Bolton, C.: Brit. M. J. **2**: 269 (Aug. 18) 1923.
11. Hurst, A. F.: Lancet **1**: 111 (Jan. 20) 1923.

reporting a woman of 69, her daughter of 44, and her daughter of 25, all having Addison's anemia and achylia; that in the examination of the gastric contents of twenty-two children and two sisters of twelve patients with Addison's anemia and achylia, nine of the children and one sister of seven of the twelve patients had achlorhydria, and that one man with Addison's anemia had a boy of 10, a girl of 4 and a boy of 6 with achlorhydria. This is a very interesting finding, and would warrant more careful observation of immediate relatives of persons suffering from primary anemia. Hurst has particularly emphasized this, and concludes that gastritis follows achlorhydria rather than being the cause of this pathologic condition. His conclusions are entitled to very careful consideration, even if somewhat at variance with our previous impressions.

I believe that the finding of an achlorhydria is important even in the absence of digestive symptoms. It is well known that it is a decided factor in the etiology of colon disturbances, possibly in part on account of the introduction of food into the intestinal tract in an imperfectly prepared state, due to lack of peptic digestion. Further, imperfect disintegration due to the hypermotility usually associated with the condition certainly is favorable to imperfect intestinal digestion, and, with a larger undigested residue introduced into the colon, bacterial activity of a putrefactive and fermentative character is markedly increased, which favors the development of colon irritation with the possibility of an intestinal toxemia. In all probability, the absence of acid and partially digested proteins seriously interferes with the secretion of bile and pancreatic juice. It was prevoiusly supposed that hyperchlorhydria was associated with gallbladder disease. Our findings are not definitely suggestive of this. Whether this is so in the early stages of gallbladder disease I am unable to say, as most of our cases are chronic in character, having exhibited symptoms of gallbladder trouble for a number of years prior to examination. It would be difficult to determine whether the achlorhydria that we observe in our gallbladder cases results from a chronic infection of the gastric mucosa from the same blood-borne infection of the same type that is affecting the gallbladder. The possibility of the achlorhydria preceding the gallbladder disturbance and being a factor in its etiology will probably require further study. Biliary stasis certainly is a factor favoring gallbladder disease, and it may be that the achlorhydria is in a measure responsible for this.

Cases exhibiting achlorhydria in which, with a repetition of the test meal a few days or weeks later, a normal acidity or even a hyperacidity is found, might be explained on the basis of the neutralization incident to the excessive regurgitation of the duodenal contents. In a number of cases of hypoacidity, the graphic curve describing the acid value would suddenly drop to zero, and, coincident with this, bile would be found in considerable quantity. It might disappear in possibly thirty minutes, and the acid values would return to a point as high as was noted prior to the regurgitation of the bile. Rehfuss and Hawk [12] called attention to the lessened tonus of the pylorus during the interdigestive phase and the constant finding of trypsin and the presence of bile, which might be a decided factor in the lessened acidity noted in the fasting stomach. In practically all cases in which we have employed the gastric analysis, we have also resorted to the roentgen-ray examination, which has furnished us a considerable amount of information relative to motor disturbances that we believe helps to explain the variation of acid values.

12. Rehfuss, M. E., and Hawk, P. B.: Gastric Analysis, J. A. M. A. 76: 564 (Feb. 26) 1921.

HYPERSECRETION

Concerning hypersecretion, we are of the opinion that when we have partial or complete pyloric obstruction, we have marked evidences of this secretory disturbance, as determined by the quantity obtained from the fasting stomach, as well as physical indications of an excess of secretion during the digestive phase. Jagic and Spengler [13] say that what used to be called idiopathic hypersecretion is now known to be "an excitative secretory disturbance alone or in combination with spasms in stomach and bowel from a functional neurosis modifying both the secretory and motor functions." In our cases in which hypersecretion is of such a degree as to be definitely disturbing, it is practically always associated with motor disturbances incident to a considerable pyloric obstruction, delaying the emptying time of the stomach and causing a retention of food products for a much longer time than is normal. Carlson mentions that essential hypersecretion probably does not exist, stating that the factors definitely known to produce hypersecretion are delayed gastric evacuation from obstruction at the pylorus, or gastric stasis due to factors that do not at the same time depress the gastric glands, and there no doubt is a group of cases in which these phenomena, which are definitely of nervous origin and not in any way associated with motor disturbances, are observed. We have observed but few cases of this character.

CONCLUSIONS

1. The results of a complete gastric analysis indicating gastric secretory disturbances are valuable from a diagnostic standpoint, but may be misleading unless correlated with other possibly more important findings.

2. The fractional method gives a more definite picture of the secretory behavior of the stomach during the interdigestive as well as during the digestive phase, and should if possible replace the older methods of analysis.

3. Hyperchlorhydria is not a valuable diagnostic finding, and is probably most frequently the result of motor disturbances giving rise to hypersecretion and with prolonged secretory stimulation.

4. Achlorhydria or achylia gastrica is a much more important finding and is more suggestive of pathologic change. Definite conclusions as to an achlorhydria should not be determined on the results of one analysis. The findings of the Ewald test meal are much less reliable than the fractional analysis.

5. Hypersecretion of such an extent as to cause disturbing symptoms, in our observations, is more frequently associated with motor disturbances, and its presence would warrant, in addition to a gastric analysis, careful roentgen-ray observation of the gastro-intestinal tract.

ABSTRACT OF DISCUSSION

DR. CLEMENT R. JONES, Pittsburgh: I want to defend the Ewald type of test breakfast. It is to be presumed that for reliable results the patient has been accustomed to the stomach tube. Any one who has done a considerable number of Ewald test examinations will realize that the first examination is of limited value. Advocates of the fractional method seem to assume that there is something inherent in the Ewald meal that makes it possible to take only one test breakfast.

13. Jagic, N., and Spengler, G.: Med. Klinik. 18: 920 (July 16) 1922; abstr. J. A. M. A. 79: 1086 (Sept. 23) 1922.

Therefore, I wish to refer to a procedure I have followed for some time of making a five-day successive progressive test, giving at the same hour on five days next following each other a test breakfast of the Ewald type and removing the breakfast at thirty and sixty minutes, one hour and twenty minutes, one hour and forty minutes, and two hours, on each of the successive days. We cannot lightly pass over the work of Dr. Gorham of St. Louis, who demonstrated the unreliability and inaccuracy of the 10 c.c. recovered from a stomach containing a test breakfast, and showing that in a single patient, if one removes all the contents of the stomach, he may recover in eight or ten different beakers as many as seven or eight or perhaps ten different qualities as regards acidity of the gastric juice. In verifying Dr. Gorham's work, I have in a number of cases found that one specimen removed at the same instant as another varied as much as from 50 to 100 points of total acidity. The difficulty in examining the stomach contents of a patient, the difficulty for the patient of the long, continuous and uncomfortable condition, to say the least, during the period of the fractional method, are points to be considered. Many of my confrères believe that they get a certain amount of psychic effect on the patient during this period. Dr. Friedenwald does not consider that there is any untoward effect or any change in the secretion due to this factor. I admit that the study of the stomach in the interdigestive period would be a good deal more accurate with the Rehfuss tube or the fractional method than with an investigation by means of one test. With reference to what Dr. Eggleston said relative to acidity, acidity is higher on the outside of the meal mass than in the center. We cannot but feel that the high values in the fractional method are due to securing the acid on the outside of the mass, whereas, when we take the entire mass of the stomach contents and filter the entire meal, we get the average acidity of the stomach. In studying the achylias we may accomplish the same result, more accurately estimating the acidity by using the five-day consecutive progressive meal.

DR. A. C. IVY, Chicago: We no longer have to speculate concerning the occurrence of a hypernormal secretion of gastric juice with pyloric obstruction, nor do we have to speculate as to the cause of the hypernormal secretion. We have evidence in the University of Chicago laboratory of physiology at the present time which shows that a definite hypernormal secretion occurs when a pyloric obstruction is produced experimentally in Pawlow pouch dogs—not in all of them, but in about 70 per cent. Jarvis and I have shown that hydrolized proteins—meat, casein, etc.—stimulates gastric secretion markedly when administered in small amounts. Given a pylorospasm or pyloric obstruction, the hydrolysis of proteins would be more complete, and hence the stimulation of the chyme in the intestine would be greater. Further, which is an additional factor but even more important, Lim, MacCarthy and I have shown that mechanical distention of the stomach stimulates gastric secretion, contrary to the observations of Pawlow, but confirmatory of the original contention of the clinicians that worked and taught contemporaneously with the physiologist Heidenhain, who believed in mechanical stimulation. Mechanical stimulation of the stomach can be demonstrated by resecting the stomach, but retaining it as a pouch of the whole stomach and anastomosing the duodenum to the esophagus. If one inserts a balloon into this stomach, with the vagi cut, and distend the balloon, marked stimulation of the gastric glands occurs. Therefore, we have evidence on at least two factors which explains hypernormal secretion of gastric juice when accompanied by pylorospasm or by pyloric obstruction.

DR. JULIUS FRIEDENWALD, Baltimore: I should like to draw attention to some conclusions obtained by Gantt, Morrison and myself in our studies on fractional analyses. The stomach content obtained by means of the ordinary test meal is not a homogenous mixture, since fractions aspirated in rapid succession through the Rehfuss tube reveal a variation in acidity to a greater or less degree. A further evidence of this fact is noted in that, by altering the position of the tube quickly from point to point in the stomach, the fractions removed also reveal marked changes in acidity. Dr. White has also confirmed these experiments. While these variations may be marked, they are frequently moderate, and owing to the fact that, according to Lockwood and Jacobson, the tube tip rests near the pylorus in the seated or reclining posture, the cycles of digestion as they occur in the pars media and pylorica are obtained by means of a fractional analysis and therefore present fairly accurate information regarding the gastric digestion. The variation in acidity may, however, be largely reduced by mixing the contents and rapidly aspirating them, and this procedure must from now on be taken advantage of in all examinations requiring accurate information regarding the entire contents. Daily variations in acidity of the gastric contents occur, but this variation is moderate; a hyperacid, normal or hypo-acid secretion continues to present, as a rule, the same character of acidity. The tube itself or the tip has practically no effect on the secretion of acid in the stomach. The acidity of the gastric secretion is not ordinarily influenced by means of the "Sippy treatment" in ulcer, even though the patient may show evident clinical improvement. More important than the study of the gastric secretion following a test meal is the investigation of the gastric residuum, from which we obtain not only a clearer idea of the motility of the stomach in relation to secretion, but also information from the microscopic examination which may be extremely helpful in drawing conclusions in diagnosis.

DR. FRANKLIN W. WHITE, Boston: The objection that has been raised to the single one-hour test is that it simply shows one phase of digestion and does not show anything that has gone before or anything that is coming after, and, therefore, the fractional analysis carrying the process right through the whole phase of digestion is more complete and accurate. Unfortunately, fractional analysis is based on a fallacy, not always recognized, which Dr. Gorham has pointed out; namely, the assumption that gastric content is a homogenous, uniform mixture and that a small portion which is taken out is representative of the whole. This is not true. Any one can verify this for himself in the simplest way. I carried through 500 analyses and found exactly the same kind of figures that Dr. Gorham had found; in other words, if we take out a small fraction of gastric contents and immediately another small fraction as rapidly as we can, with the tip of the stomach tube in the same place as determined by the fluoroscope, and then still another fraction, we may find that the acidity of one will be low, one medium, and one high; one will be 20, another 40, another 60, and so on. When we realize this is the case, we lose something of our interest in fractional analysis. It seems to me that the only satisfactory way in the average case is to empty the stomach of its contents at the end of an hour, and make the analysis of those contents. In the average case, fractional analysis would seem to be a waste of time. The method I have used and which is perfectly satisfactory and meets the disadvantage of a single test in the low acid case is to put the Rehfuss tube in at the end of the hour (we do not learn much in the first three quarters of an hour), and remove some contents for analysis. If there is plenty of gastric secretion, one may empty the contents of the stomach, and call the test finished. If the secretion is low, as in malignant cases, or achylia, the tube may be left in for the rest of the period of digestion and fractions taken out until the stomach is empty. In other words, one should use the fractional method only in the low acid or anacid cases, but not waste time with fractional analysis in the cases with average or high secretion. Furthermore, we must not discourage the family physician in the use of the single one hour test of gastric secretion when, as a matter of fact, in the large majority of cases, it is just as good as fractional analysis, and far simpler and easier.

DR. ELMER L. EGGLESTON, Battle Creek, Mich.: Relative to the matter of inaccuracy of the fractional test meal as compared with the Ewald method: The procedure to which Dr. Jones referred in which he removed the test meal at different periods after ingestion, thus making it in reality a fractional test meal, is so much more inconvenient than the fractional method of Rehfuss that its use, in my opinion, would be questionable. I appreciate the force of Dr. White's criticism that there may be some inaccuracy in the results when the Rehfuss tube is used incident to the tube being at different

stomach levels, and to determine the degree of inaccuracy I have experimented by giving the same patient two or three tubes at the same time and, by observing them under the roentgen ray, located one bulb near the pylorus, another at the pars media and another at the cardia. We found some variation, but not so great as to warrant our concluding that the procedure should be discarded; and, further, in the case of the same individual with the three tubes in place, by thorough mixing of the stomach contents by mechanical means and aspirating through the three tubes at approximately the same time, we have found that there was but slight variation. Therefore, we follow the procedure of having the attendant thoroughly mix the stomach contents by physical manipulation just prior to the aspiration, in which way we believe that we avoid the possibility of error as suggested by Dr. Jones and Dr. White.

PRESENCE OF FREE HYDROCHLORIC ACID IN GASTRIC CONTENTS IN CARCINOMA OF STOMACH *

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Since the discovery made in 1879 by Van den Velden in Kussmaul's clinic, that there is an absence of free hydrochloric acid in the gastric contents in carcinoma of the stomach, great reliance has been placed on the significance of this sign in the diagnosis of this affection; the frequency of its occurrence has been noted by different observers to vary between 77 and 90 per cent. It was soon observed, however, that gastric carcinoma was not the only affection presenting an absence of free hydrochloric acid, and that this finding might also be present in many affections that were benign in character. On the other hand, free hydrochloric acid was observed too, even in excess, in many instances of gastric carcinoma not only in the variety known as carcinomatous ulcers, but also in the usual form. It was therefore concluded that, while an absence of free hydrochloric acid is ordinarily observed in carcinoma of the stomach, this finding is by no means a specific one for this affection.

Since the advent of the fractional method of gastric analysis, further direct evidence as to the value of this finding has been obtained. Hartman, in a study of 551 patients with gastric carcinoma, according to this method at the Mayo Clinic, notes that achlorhydria is present in about half the cases; hypochlorhydria, in about 15 per cent.; normal acidity, in about 20 per cent., and hyperchlorhydria in about 7 per cent.

In our study, we have collected the analyses of the gastric contents in 100 cases of gastric carcinoma in all stages of the disease. The location of the growth could be definitely determined in only forty-two of the 100 cases by means of operation or necropsy; but, according to Hartman, the location of the lesion has no material influence on the degree of acidity. As far as could be ascertained, the pylorus was involved in fifty-six instances; the cardiac area in seven; the body of the stomach, not including the orifices, in twenty-one, and general involvement was present in sixteen.

Fractional analyses were made in all instances, and the quantity of fasting contents observed. The quantity of fasting gastric secretion obtained varied in this condition according to whether there was or was not a pyloric obstruction at hand. In the nonobstructive cases, there is usually a very rapid emptying of the stomach, while in the obstructive forms there is retention. In thirty-nine of the 100 cases, obstruction was noted to a greater or less degree.

TABLE 1.—*Cases of Gastric Carcinoma with Achlorhydria*

	Fraction Test Meal		Ewald Test Breakfast		
Case	Total Acidity	Free Hydrochloric Acid	Total Acidity	Free Hydrochloric Acid	Location of Growth in Stomach
1	32-30-28-28	0-0-0-0	38	0	Pylorus
2	21-24-22-20	0-0-0-0	34	0	Body
3	8-10-12- 6- 8-12	0-0-0-0-0-0	22	0	Pylorus
4	24-28-20-28-22-28-40-40	0-0-0-0-0-0-0-0	28	0	Pylorus
5	38-46-42-40-40-45-40	0-0-0-0-0-0-0	42	0	Pylorus
6	44-40-38-42-48-48	0-0-0-0-0-0	38	0	Cardia
7	38-26-26-34-28-24-28-28	0-0-0-0-0-0-0-0	28	0	Pylorus
8	44-42-48-46-42-40-38-36	0-0-0-0-0-0-0-0	44	0	Pylorus
9	52-50-48-48-52-50-54-52	0-0-0-0-0-0-0-0	50	0	Pylorus
10	38-44-46-42-38-34	0-0-0-0-0-0	32	0	Body
11	52-54-50-48-46-48-44-48	0-0-0-0-0-0-0-0	42	0	Pylorus
12	22-24-22-20-18-20	0-0-0-0-0-0	16	0	Cardia
13	54-50-46-48-50-52-50-50	0-0-0-0-0-0-0-0	52	0	Pylorus
14	36-30-30-44-38-36-32-36	0-0-0-0-0-0-0-0	32	0	Pylorus
15	48-54-30-34-34-30	0-0-0-0-0-0	42	0	Body
16	48-42-44-48-54-46-50-50	0-0-0-0-0-0-0-0	32	0	Pylorus
17	46-44-52-36-40-46	0-0-0-0-0-0	24	0	Cardia
18	52-38-44-52-36-42-40-52	0-0-0-0-0-0-0-0	50	0	Pylorus
19	54-58-52-56-52-50-52-52	0-0-0-0-0-0-0-0	42	0	Pylorus
20	28-18-20-26-30-38-28-24	0-0-0-0-0-0-0-0	26	0	Pylorus
12	7- 7-10-15- 8- 5	0-0-0-0-0-0	15	0	Body
22	52-46-40-38-20-24-30-18	0-0-0-0-0-0-0-0	42	0	Pylorus
23	42-54-44-58-56-50-52-50	0-0-0-0-0-0-0-0	56	0	Pylorus
24	38-34-30-44-28-26-22-32	0-0-0-0-0-0-0-0	34	0	Pylorus
25	58-46-52-50-56-54-54-52	0-0-0-0-0-0-0-0	54	0	Body
26	36-34-44-50-38-38	0-0-0-0-0-0	42	0	General involvement
27	25-18-14-22-30-42	0-0-0-0-0-0	38	0	Pylorus
28	22-26-28-22-30-42	0-0-0-0-0-0	40	0	Body
29	34-48-42-40-44-38-30-32	0-0-0-0-0-0-0-0	32	0	Pylorus
30	22-26-18-24-10-12	0-0-0-0-0-0	14	0	Body
31	42-54-50-48-46-54	0-0-0-0-0-0	48	0	Body
32	38-34-37-38-48-32-30-24	0-0-0-0-0-0-0-0	32	0	Pylorus
33	18-26-22-20-14-28	0-0-0-0-0-0	28	0	Pylorus
34	5-14-12-10	0-0-0-0	18	0	General involvement
35	38-46-54-28-26-50-44-42	0-0-0-0-0-0-0-0	46	0	Pylorus
36	48-42-54-56-50-42-40-36	0-0-0-0-0-0-0-0	34	0	Pylorus
37	14-12-10- 8- 8- 4	0-0-0-0-0-0	14	0	Pylorus
38	48-56-54-28-32-30	0-0-0-0-0-0	42	0	Pylorus
39	52-56-50-48-42-40-44-42	0-0-0-0-0-0-0-0	50	0	Pylorus
40	44-42-38-36-30-42	0-0-0-0-0-0	32	0	Cardia
41	64-52-48-60-42-50-48-54	0-0-0-0-0-0-0-0	58	0	Pylorus
42	32-30-28-26-28-26	0-0-0-0-0-0	40	0	Pylorus
43	28-18-20-16-14-16	0-0-0-0-0-0	22	0	Body
44	38-48-46-36-38-40	0-0-0-0-0-0	34	0	Pylorus
45	18-14-12-18-18-14	0-0-0-0-0-0	12	0	General involvement
46	54-52-54-58-62-54-50-56	0-0-0-0-0-0-0-0	48	0	Pylorus
47	48-36-32-44-50-42	0-0-0-0-0-0	36	0	General involvement
48	54-42-38-38-32-46-52-50	0-0-0-0-0-0-0-0	44	0	Pylorus
49	22-18-26-14-18-24	0-0-0-0-0-0	24	0	General involvement
50	48-46-48-52-56-40	0-0-0-0-0-0	46	0	General involvement
51	28-36-42-26-28-38-24-28	0-0-0-0-0-0-0-0	30	0	Pylorus
52	22-18-16-14-16-12	0-0-0-0-0-0	22	0	Pylorus

TABLE 2.—*Cases of Gastric Carcinoma with Hypochlorhydria*

	Fractional Analysis		Ewald Test Breakfast		
Case	Total Acidity	Free Hydrochloric Acid	Total Acidity	Free Hydrochloric Acid	Location of Growth in Stomach
1	34-30-38-36-30-24	18-16-14-12- 8-16	34	18	Body
2	28-26-28-32-30-32	8-12-16- 0-12-10	14	0	General involvement
3	48-54-46-42-38-38-42-32	16-14-12- 8-10- 8- 0-12	46	0	Pylorus
4	28-34-36-42-36-30-28-40	14-18-16-12-18-14-12-14	38	16	Pylorus
5	28-36-34-32-36-32	16-18- 0-14-12-18	32	0	General involvement
6	24-32-30-26-28-24	18-16-12-14-18-12	32	18	General involvement
7	34-38-36-38-36-42-34-38	18-10-12-14-12-12-16-14	40	0	Pylorus
8	28-20-32-24-26-20	8-12-14- 8- 6- 6	34	0	Body
9	18-22-24-20-18-22	6- 8- 0-12-10- 8	22	0	General involvement
10	24-32-38-32-36-38	12-14-18-16-18-12	36	14	General involvement
11	22-30-22-28-20-28	0-12-14-16-12-10	32	0	Cardia
12	34-42-38-40-38-46-42-46	18-16-10-12-18-16-12-14	36	12	Pylorus
13	32-34-30-34-32-34	10- 8- 0-10- 8-12	30	0	General involvement
14	56-42-40-38-44-46	8-12-18-18-16-18	44	18	Body
15	52-42-48-36-24-22	14-16-12-18-14-12	48	0	General involvement
16	28-32-30-28-30-32	10- 0-12-14- 8-10	30	0	Body

* From the gastro-enterologic clinic of the University of Maryland School of Medicine.

* Read before the Section on Gastro-Enterology and Proctology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

The results obtained by means of the fractional method were compared in each instance with those obtained by the Ewald test breakfast; the normal degree of free hydrochloric acid was estimated to be from 20 to 40; achlorhydria, 0; hypochlorhydria, from 0 to 20, and hyperchlorhydria, above 40.

The accompanying tables present our findings, the acid values representing the highest values noted by the fractional analysis. The figures are those obtained in the order of the fractional extraction.

TABLE 3.—*Cases of Gastric Carcinoma with Normal Acidity*

	Fractional Analysis		Ewald Test Breakfast		
Case	Total Acidity	Free Hydrochloric Acid	Total Acidity	Free Hydrochloric Acid	Location of Growth in Stomach
1	42-48-52-44-42-44	22-28-36-32-30-34	46	32	Body
2	48-56-52-48-42-48-38-40	38-32-32-28-34-30-34-32	52	0	Pylorus
3	48-42-40-44-48-46	28-34-26-38-36-38	48	32	Pylorus
4	38-42-44-40-38-42	22-24-36-38-24-22	42	0	Pylorus
5	54-78-48-72-58-64-60-52	28-34-32-38-38-36-32-30	58	0	Pylorus
6	32-30-28-26-24-28	28-22-24-24-20-20	32	0	Body
7	38-42-54-36-38-44	24-26-24-26-22-24	48	28	Pylorus
8	58-72-64-70-64-58	22-28-32-30-36-28	68	0	Pylorus
9	48-54-79-60-52-54	26-24-28-32-36-30	52	0	Pylorus
10	38-46-48-52-50-54-74-68	24-32-38-30-28-28-26-22	52	0	Pylorus
11	48-56-52-46-50-48	32-38-30-28-28-34	52	36	Cardia
12	58-64-78-74-62-58	26-32-38-24-22-28	68	28	Pylorus
13	48-64-60-38-48-50	32-38-36-28-24-34	56	0	Pylorus
14	68-62-74-58-46-62-68-60	26-22-32-38-36-30-28-34	72	30	Pylorus
15	54-52-48-46-42-48	22-28-36-32-22-28	50	0	Pylorus
16	54-50-48-54-46-48	32-36-28-26-24-28	50	34	Body
17	48-46-38-44-48-54	38-36-34-38-36-32	44	0	Pylorus
18	72-72-70-68-72-76-70-62	24-36-32-38-34-36-30-32	66	0	Pylorus
19	48-56-52-50-46-44	32-30-24-22-26-22	54	26	Pylorus
20	52-48-52-54-46-44	28-24-22-28-34-36	50	28	Body
21	58-42-46-48-38-42	28-46-42-36-28-28	40	0	Cardia
22	68-54-72-76-58-48-62-60	28-38-34-32-30-36-32-32	68	26	Pylorus
23	48-42-48-52-56-56	22-38-38-32-28-26	52	0	Body
24	68-54-72-58-48-62-60-58	24-34-32-28-26-28-24-22	48	0	Pylorus
25	42-48-56-52-46-48	22-30-28-22-24-32	52	24	Pylorus
26	42-58-46-42-42-40	30-38-36-32-26-34	40	0	Body

TABLE 4.—*Cases of Gastric Carcinoma with Hyperchlorhydria*

	Fractional Analysis		Ewald Test Breakfast		
Case	Total Acidity	Free Hydrochloric Acid	Total Acidity	Free Hydrochloric Acid	Location of Growth in Stomach
1	56-58-64-62-74-72-58-56	42-48-52-54-46-42-44-46	56	0	Pylorus
2	58-56-64-62-62-66	52-48-42-46-44-48	70	68	General involvement
3	68-74-64-62-66-74	56-62-54-58-48-46	72	60	General involvement
4	78-74-72-70-76-64-72-70	52-68-64-58-66-48-62-60	66	0	Pylorus
5	62-70-74-62-68-62	56-62-64-58-54-56	68	52	Body
6	66-72-76-72-78-68	58-66-62-58-62-60	74	50	General involvement

CONCLUSIONS

From a study of the 100 cases of carcinoma of the stomach, in which fractional analyses were made of the gastric contents, 52 per cent. showed an achlorhydria, 16 per cent. hypochlorhydria, 26 per cent. normal acidity and 6 per cent. hyperchlorhydria. When these figures are compared with those obtained by means of an Ewald test breakfast, it becomes evident that, in a large number of instances in which anacidity is noted by means of the later method of examination, this finding is misleading, since free hydrochloric acid may still be present at some period during digestion, when the gastric secretion is examined by the fractional method. If we were guided in our conclusions by the findings of the Ewald test breakfast alone, the percentage of achlorhydrias in our series would have been 79 instead of 52.

As hardly more than half of the cases of gastric carcinoma present an achlorhydria, too much importance should not be attached to this finding as a necessary sign of this disease. These conclusions are in accord with those reported by Hartman.[1]

1. Hartman, H. R.: Am. J. M. Sc. **163**: 186 (Feb.) 1922.

ABSTRACT OF DISCUSSION

DR. SEALE HARRIS, Birmingham, Ala.: The point Dr. Friedenwald brought out as to the value of the fractional test is important because we frequently find the presence of hydrochloric acid at one time, and within a one-hour period no hydrochloric acid is present. Another point brought out was this: That one examination of stomach contents is not of a great deal of value, because hydrochloric acid may be absent at one examination and in excess at the next, particularly in the neurotic cases. Therefore, the one finding of an absence of hydrochloric acid is not of any value. I recall an instance that occurred in Vienna. The patient had a distinct tumor, pain, emaciation and complete absence of hydrochloric acid, and the Oppler-Boas bacillus was present in the stomach contents. The diagnosis of carcinoma was made. The fluoroscope showed that the patient had a large gumma of the liver. Finding free hydrochloric acid in the stomach contents in a case of suspected carcinoma is of great value in prognosis. The only two cases of cancer of the stomach I have had in which the condition has apparently been "cured" by operation were of that type. There was an excess of hydrochloric acid. One patient was operated on three years ago and the other about one year ago, and in neither is there any evidences of recurrence. As to the question of diagnosis of carcinoma of the stomach, the point I would emphasize, particularly in the case of the patient of cancer-bearing age, is that if there is any suspicion whatever of carcinoma of the stomach, the patient should be given the benefit of an exploratory operation.

DIATHERMY IN INTERNAL MEDICINE*

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During ten years devoted to internal medicine and more particularly to cardiovascular diseases, I have seen many persons complaining of heart pains. A large percentage of these pains had been diagnosed, I believe erroneously, as angina pectoris, my examination frequently disclosing the cause of the pains to be a neuralgia or myalgia of the chest wall. The slow and often unsatisfactory results obtained in treating these conditions with rest, medicines, conductive and convective heat, and other time honored remedies, led me to investigate diathermy, which is the only method I know of whereby it is possible to apply physiologic heat to tissues beneath the surface.

A proper technic is as important in diathermy as in any other therapeutic measure. Indeed, it is my firm conviction that a better judgment and a broader general knowledge of medicine are required in the proper application of diathermy and in the selection of cases for treatment, than in most other therapeutic measures.

In beginning the use of diathermy I found myself confronted with problems not usual with many other therapeutic measures. The authoritative literature on the subject was meager, and I felt that I was pioneering to a large degree. Another and more serious problem was the economic side of its use. With but few exceptions we should expect no more relief from one treatment, or scattered treatments, with diathermy, than would be expected from the indifferent use of digitalis. So I had the problem of frequent treatments, consuming from one-half to one hour each, and it required courage to ask patients to report daily or every other day for treatments, the nature and results of which were a trial in my own mind. Again, most of our therapeutic measures have their clinical trial in the wards of hospi-

* Read before the Section on Pharmacology and Therapeutics at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

tals and clinics, and in our private work we are led by these experiences. Diathermy has not as yet had this thorough test in the field of internal medicine. Therefore the conclusions that I have drawn from its use are very largely my clinical impression of its value rather than any detailed series of cases or statistics.

In all, 1,470 treatments were given to sixty-one patients, divided among the various body systems as follows: circulatory, 526; nervous, 266; respiratory, 54; joints, 352; muscular, 223, and urogenital, 39. Time and space do not permit of the discussion I should like to make of these various groups, and this study is limited to a consideration of arterial hypertension and precordial pains, including angina pectoris.

Full use of the various diagnostic measures was made in the study of these patients. When found, foci of infection were removed, but diathermy was not withheld pending a clearing up of the foci of infection. This is important, since during the treatment prompt relief was obtained in many painful conditions, thereby proving diathermy of diagnostic value, and lastly, when successful, of economic value in curtailing further diagnostic and therapeutic expense.

ARTERIAL HYPERTENSION

A review of authoritative literature on the treatment of arterial hypertension discloses such statements as this: "It is said that electricity is of value, but the author has had no experience with this method, and there is no evidence that electricity actually reduces hypertension and keeps it within limits." Nevertheless, there is considerable literature to the effect that it will reduce high tension, and theoretically the idea seems sound. I thought it best, however, to limit this study to thirteen selected hypertensive patients, who had been under my care for three or more years, and whose cooperation for the purpose of this investigation was obtained for more than one year. The treatment for a year or more had been a simple general diet; rest, including a midday rest period, and care in avoiding emotional disturbances; good elimination, and hygiene. During this period of what I term rational treatment, the patients had been seen every month or two and the blood pressures had averaged remarkably uniform for each case.

The types into which these cases fall are: (1) climacteric, five, aged from 42 to 54; (2) essential hypertension, a man, aged 60, and two women, aged 45 and 68; (3) nephritic, a man, aged 64, and two women, aged 53 and 63; and (4) arteriosclerotic, two men, aged 58 and 61.

To avoid unfavorable emotional and physical disturbances, these patients were treated in a quiet, darkened room; tight clothing was loosened and they reclined comfortably on the dielectric pad. The office type Tycos instrument was used, the sleeve being left in situ during the treatment. Before starting the treatment, blood pressures were taken at intervals of from one to three minutes until no further lowering was recorded. This usually required from five to ten minutes. The treatment was then given. Until the final pressure reading was made, every precaution was taken, so that the patient was not disturbed.

The d'Arsonval circuit was used. The length of treatments varied from one-half to one hour, mostly the latter; the frequency of treatments varied from one to five weekly. Very early I found that too prolonged treatments with high milliamperage were weakening. In two overtreated patients, a marked sense of fatigue persisted for several days. A third overtreated patient was a woman, aged 63, with chronic nephritis. Her blood pressure before the treatment was 224 systolic, and 142 diastolic. Through an oversight, she was left on treatment one and one-half hours, with a resultant reduction in blood pressure to 186 systolic, and 130 diastolic. She complained of feeling faint and weak, and after resting in the office, was sent home in a cab. Three hours later I was hurriedly summoned, and found her with marked pallor, orthopnea, the auricles fibrillating, and apprehensive of death. Strophanthus intravenously, and morphin, followed by intramuscular administration of digitalis, happily improved the circulation and restored a regular rhythm, but two weeks' rest was required before she regained her usual health.

During the first two months of this study, my results in reducing pressures were practically nil. On further thought and investigation, I appreciated that one could hardly expect different results when the after-care had been so indifferent as to permit a patient to continue his or her usual activity after a treatment. Under ideal conditions of the application of diathermy to reduce hypertension, the patient should rest in bed for several hours directly after the treatment. The retention of the heat in the body tissues would thus be aided and its physiologic action prolonged and augmented. It is obvious that such conditions can be attained only when patients are staying in a properly equipped hospital or sanatorium, or by treatments given in the patient's home. I made one attempt to give a home treatment, but the difficulties were too great. Our local hospitals had no equipment, so my investigation was confined to those patients who were able to come to the office.

From this time on, each patient was carefully instructed as to the importance of rest following treatments, and I received far better cooperation than I expected. Results in reducing the pressure soon became apparent. The brief reports given below will, in general, illustrate my method and the average response to the treatments.

REPORT OF CASES

CASE 1.—Mrs. A., aged 48, was affected with climateric hypertension, with complaints of hot flushes, palpitation, nervousness, fatigue and backache. The average pressures for the year preceding diathermy were 180 systolic and 105 diastolic. D'Arsonval autocondensation was used. Three treatments weekly for three months lowered the average pressure readings to 162 systolic and 94 diastolic. Diathermy was discontinued for one month, but the same rest periods, as in all similar experiments, were continued, and she reported weekly for observation. The pressures gradually crept up, and before the end of the period were at their former level. The backache had disappeared. The patient felt better and slept better under the treatments. These were continued weekly, and each treatment was followed by a reduction of from 8 to 20 mm. of mercury systolic, and from 5 to 10 mm. diastolic. Over a three months' period of weekly treatments, the average of the readings was 170 systolic and 98 diastolic. At this time diathermy was stopped, and the patient was put on sedative full tub baths, three weekly. Two visits at her home, arranged to follow the baths by one hour, showed a reduction in the pressures equal to that produced by diathermy.

CASE 2.—Pronounced lowering of the blood pressure, and in a type of case unequaled in my experience, was obtained with Mrs. G., aged 58, affected with arteriosclerotic hypertension. The patient had had apoplexy three years before. She had recovered full use of the left arm and leg, but was left with a speech defect, disturbances of vision and attacks of dizziness. Under average conditions, her blood pressure ranged from 182 systolic and 96 diastolic to 210 systolic and 102 diastolic. Series of diathermy treatments were given,

each period extending from one to three months and followed by similar periods free from electrotherapy. From one to three weeks after the start of each diathermy period, the blood pressure reached its lowest point, fluctuating from 136 systolic and 84 diastolic to 148 systolic and 94 diastolic, with general improvement in her condition. These low pressures were maintained throughout the treatments, but resumed their former high level within a few weeks after they were stopped. Unfortunately, her home conditions were not favorable to the use of sedative baths.

This investigation had now been carried on for more than a year. It had been determined that, with careful attention to details, diathermy would reduce arterial hypertension, and, as long as the treatments were continued, would keep the pressures within safer limits. Properly applied, the treatments were time consuming and harassing to the patients and to me, and it was with a feeling of relief that I entered into an agreement with eight of these patients, whose home conveniences were such that sedative baths could be taken at their pleasure, to compare the action of baths with my records of diathermy in reducing their pressures.

My directions for these baths were as follows:

The bathroom must be warm and everything in readiness so that you may retire immediately following the bath. Fill the tub with water and maintain it at a temperature between 98 and 102 F., as determined by a reliable bath thermometer. Lie comfortably in the tub, fully relaxed, for from fifteen to thirty minutes, or until drops of perspiration are felt gathering on the forehead. No attempt must be made to dry thoroughly, the drip only being wiped away. Put on outing flannel nightclothing and drink one-half glass of hot water before retiring. Should you feel faint or weak, stop the bath at once and retire.

The physiologic effects of such a bath, under the prescribed conditions, followed by nocturnal bed rest for from eight to twelve hours, are, in my experience, superior to other methods of hydrotherapy in the treatment of hypertension.

Invariably the reduction of pressures following these baths compared favorably with diathermy. Restlessness, insomnia and weakness followed overtreatment, as with diathermy, and it was necessary to adjust the frequency and duration of the baths and to caution that the proper temperature of the water be observed. In time, these baths prove irksome and are likely to be indifferently performed by the average patient. Even with this selected group, frequent observation and evidence of my deep interest were necessary to encourage them.

COMMENT

There is a minimum to which any given case of compensatory hypertension may be reduced without provoking symptoms and signs of circulatory failure. This point should be established by a few weeks of intelligent observation and treatment, and our efforts should then be directed toward maintaining the pressures at this optimum level. As long as the fall of the pressures is unaccompanied by circulatory or nervous discomfort, whatever the method used, it is safe to proceed cautiously with attempts to lower them. Baths and diathermy, singly, or when wisely combined and adjusted to fit the particular patient, are equally efficient in reducing hypertension. This reduction persists as long as the treatments are continued, provided the other important factors—rest, diet and hygiene—are faithfully observed. When baths and diathermy are stopped or indifferently performed, the pressures gradually creep up. A proper application of diathermy is but half the treatment; the other half is the after-care.

PRECORDIAL PAINS

The types of precordial pains and distress considered here fall into two groups: (1) angina pectoris, usually substernal; (2) precordial pains to the left of the sternum associated or not with foci of infection. The following three brief histories illustrate the different types and the response to diathermy.

Angina Pectoris.—It was not until I had had considerable experience with diathermy that my first attempt to treat organic angina was undertaken.

CASE 3.—M., a man, aged 62, had been under my care for three years. When I was first called to see him he had just returned from a large sanatorium, where a fine staff had made every effort to relieve his severe and frequent attacks of precordial pain. He was in a highly nervous state, just recovering from an attack. The chief complaint was substernal pain on exertion, first noticed two years before and gradually growing worse. The attacks started with a dull, deep pain beneath the xiphoid, quickly becoming of a boring, crushing character and radiating outward over the left chest and down the arm. The tissues of the left chest were hypersensitive, and there was constant hyperalgesia of the left pectoralis muscle. The electrocardiograph findings were notching and prolongation of Q-R-S, inversion of T in Leads II and III, left ventricular predominance, and both auricular and ventricular premature beats. The blood pressures averaged 220 systolic and 112 diastolic. A harsh systolic murmur accompanied the first at the apex, and the aortic second was accentuated. The usual measures were used in my attempts to relieve him, but there was little improvement. The distress in the left chest was considered merely part and parcel of the chronic cardiac disease. This condition persisted for more than a year, so that an occasional walk of three blocks to the barber shop was quite an event.

At the first treatment he received 300 milliamperes for thirty minutes, and rested for two hours before he was taken home. That night he slept well without a sedative. During the last one and one-half years he has had more than seventy diathermy treatments. The precordial pain and distress are entirely gone, the irregularity is rarely observed, and the patient is now fairly active in his business. Several times overexertion has been followed by a peculiar "all gone" sensation beneath the midsternum, and at such times he believes he will surely die—angina sine dolore. In the two attacks I have seen, the only change has been an increase in the premature beats.

Four other patients with organic angina pectoris are still under treatment. All are men in late middle life with a chief complaint of substernal pain. In one, the substernal pain was complicated by a precordial neuralgia, which disappeared under diathermy. These patients believe that diathermy has been of definite value to them, their attacks being less frequent and severe. I believe that the symptomatic relief obtained has justified its use.

Precordial Pains to the Left of the Sternum.—Neuralgias and myalgias of the chest wall to the left of the sternum are not uncommonly diagnosed and treated as organic angina pectoris. They may complicate a true angina, as in the case just cited, and are then usually considered a part of the general symptom complex and the proper measures for relief are not taken.

CASE 4.—M., a man, aged 62, while motoring in California, first noticed a dull pain under the left breast accompanied by tingling and numbness of the left hand. He was told that he had angina, and on his return home this was confirmed by his family physician and a consultant. He stated that the pain was brought on by lying on the back or left side, ascending stairs, and on attempting to walk rapidly. Sitting upright on a chair relieved the pain, but when he slumped down it became worse. There was no evidence of organic disease.

The blood pressure was low, the average being 98 systolic and 66 diastolic. There was exquisite tenderness of the left chest wall, at its maximum in the third space at the anterior axillary line. Diathermy was given at once, and daily for the succeeding week, with marked improvement. In the meantime the dentist reported three abscessed teeth, which were removed. In two weeks the patient was free from all pain.

Four months later he returned, complaining of neuralgia of the upper jaw and a mild recurrence of the chest pains. A roentgenogram showed two abscessed teeth and several that were suspicious. After consultation with the dentist, it was thought advisable to remove all the upper teeth. These were extracted, and on my suggestion nothing was recommended for the chest pains but the use of a hot water bag at night. Six weeks later the patient insisted on other treatment, and diathermy was used every other day for two weeks, which permanently relieved his distress.

CASE 5.—G., a man, aged 56, complained of constant soreness in the left chest and attacks of severe pain extending down the arm. This started nine weeks before, and had rapidly grown worse. He had been treated for angina by his physician without success, and was referred to me. The heart was enlarged, and the aortic second sound accentuated. The blood pressures were 165 systolic and 104 diastolic; the pulse was 68 and irregular. There was marked sensitiveness on pressure in the third and fourth interspaces. The cardiogram showed left ventricular predominance and premature beats. No foci of infection were found. Intercostal neuralgia was diagnosed, and the patient's physician was advised to try further rest and to apply radiant heat to the painful area. A week of this gave but little improvement, and he was returned to me for diathermy. Five daily treatments completely relieved the patient, and there has been no recurrence.

In Cases 4 and 5, there are lacking two symptoms that have been the predominating complaints in all my cases of organic angina pectoris; namely, attacks characterized by substernal pain associated with fear of death. My experience has taught me to regard with skepticism complaints of pain and soreness to the left of the sternum as indicating true angina pectoris, whether or not there is evidence of organic cardiac disease. Mackenzie, in his various discussions of angina, rarely mentions substernal pain or distress, while Allbutt, on the contrary, stresses this feature. According to the former's point of view, that the distress of angina is evoked by a diseased heart reflexly stimulating certain areas in the central nervous system, it seems entirely possible that pain to the left of the sternum may occur in connection with organic heart disease. Nevertheless, I am a convert to Allbutt's view of Heberden's angina, believing that it is a true aortic and not a cardiac pain and is mostly substernal. Pains to the left of the sternum are, in my experience, commonly associated with focal infection. Definite intercostal neuralgia and myalgia are frequently encountered both with and without a discoverable source of infection. If complete relief is not obtained from diathermy, a source of infection must be located elsewhere in the body and removed.

CONCLUSIONS

The results obtained from 1,470 applications of diathermy to sixty-one patients suffering from various conditions common in internal medicine, justify the following conclusions:

1. Diathermy is of value for the reduction of arterial hypertension, but sedative baths under carefully prescribed conditions are equally helpful.

2. Diathermy has given symptomatic relief in many painful conditions more promptly than I have obtained under usual treatment, and it is an addition to our other therapeutic resources.

3. It is recommended that diathermy be studied in hospitals and large clinics to define its scope, indications and limitations.

35 Chestnut Street.

ABSTRACT OF DISCUSSION

DR. ELNORA C. FOLKMAR, Washington, D. C.: I have used diathermy as a medical therapeutic agent in various conditions. It is the best means for producing heat within the tissues. Diathermy was first used as a therapeutic agent in the treatment of joint conditions in 1896. Those who employed diathermy in the war hospitals found that it excelled all other means of restoring stiff joints to normal function. It was also found to be particularly valuable in cases of nonunion of fractures. The next field of therapy in which diathermy received recognition was in the treatment of chronic conditions, especially those of the circulatory system. Before treating a case of hypertension with diathermy, one must consider the cause. If it be compensatory, no attempt should be made to reduce it, but the treatment should be directed to the renal, hepatic, cardiac, or other cause, of which it is a compensation. In all cases of simple hypertension, general diathermy, applied as autocondensation, will reduce the pressure. Autocondensation increases both oxidation and elimination. In the treatment of angina or myocarditis, diathermy should be applied locally. A large, indifferent electrode is placed on the back and a smaller one over the heart. A current of from 300 to 800 milliamperes is passed for twenty minutes. This has a soothing effect on the nerves, dilates the coronary and other vessels of the heart and thus actually affords relief, no matter what may be the cause of the angina. The relief from a single treatment sometimes inhibits another attack for months. Nagelschmidt says that if local diathermy applied through the heart does not give prompt relief in angina, an aneurysm or a grave myocarditis may be suspected. It is easy to understand why diathermy gives relief in neuritis, neuralgia and other painful conditions, such as lumbago. The latter yields like magic to local diathermy followed by rhythmic faradic massage.

DR. ALFRED FRIEDLANDER, Cincinnati: My experience with diathermy is in accord with some of the findings of Dr. Jackson. As a temporary expedient in cases of hypertension, it is of value. I cannot say, however, that it acts in other ways than as a vasodilator. We should be exceedingly cautious in ascribing to it values it does not possess. I have not gotten better results with diathermy in heart cases than with any other method. In the relief of angina, the results have not been as satisfactory as could have been hoped. The relief of pain in other conditions that have been referred to has been very marked. Last winter, a series of cases of pneumonia was treated by regular applications of diathermy. The results were not as encouraging as have just been reported. We have here a therapeutic agent of value, but its limitations must be borne in mind, and it seems to me that claiming for it virtues it does not possess, may bring a very valuable agent into disrepute.

DR. A. A. WITHAM, Portland, Ore.: From all quarters there is coming testimony that diathermy is doing good work—that the D'Arsonval current is of therapeutic value; that indirect high frequency and direct high frequency all have their place. For the last year, I have been using these to a limited extent and have become very enthusiastic over their use in some forms of precordial pain, anginal in character, which are always hard to take care of. We are having good results. What the public is asking us for is relief. We have put our patients through a course of slow diagnostic stunts, and they have become impatient and wandered away seeking relief. Why not try to understand these things? One of the chief duties of the physician is to relieve, and if we can give relief, no matter by what means, we have done our work. For my part, I want to know more about these things, and I am going to try them.

DR. EDWARD W. JACKSON, Rochester, N. Y.: In regard to the reduction of hypertension by diathermy, patients who came to the office for treatment and were then permitted to resume

their usual activity failed to obtain results. Several hours of complete rest were found necessary, immediately after the treatment, and, when these directions were followed, reduction of the blood pressure invariably resulted. The results were particularly gratifying when treatments were given in the afternoon and were followed by bed rest until the next morning. Owing to lack of hospital equipment, some of my most interesting cases were not treated by diathermy. For this reason, I have had no experience in the treatment of pneumonia. Three cases of asthmatic bronchitis were treated, with improvement. I believe diathermy almost a specific for lumbago and like conditions, and I know of no treatment that will relieve the distress occasioned by congested protruding hemorrhoids so quickly and completely as a single application of diathermy. With the exception of finding and removing infection in the treatment of chronic arthritis, it is my opinion that diathermy holds a place second to none. Its use is of decided value preceding passive or active motion of the stiff and painful joint.

Special Article

REPORT OF THE COMMITTEE ON HEREDITARY BLINDNESS*

It seems proper that this committee should report as to its efforts during the last three years for the control of hereditary blindness, especially as it becomes desirable now to obtain more exact estimates than before of the real number thus afflicted, and their cost. To do that it is necessary to recall a few familiar facts and then show why and how this question of cost can be determined.

1. Clinical records show that at least thirty-four defects of the eye, including the lids and muscles, have been found to be distinctly hereditary.

Of these, at least eight are apt to produce practical blindness—either directly or indirectly. The principal defects in this group are corneal degeneration, persistent pupillary membrane, certain forms of cataract, glaucoma, retinitis pigmentosa, macular degeneration, optic atrophy, retrobulbar neuritis, blindness with idiocy, buphthalmos and microphthalmia.

2. In our report in 1921, reasons were given for estimating that we have now in the United States from about 5,000 to 7,500 blind from hereditary defects, and that their cost probably exceeds $2,000,000 annually. The number is certainly not decreasing, and thus far no special attempt has been made to limit their continued propagation. The methods usually suggested for the control of hereditary blindness are also familiar and need only be mentioned. They are:

(*a*) Education of the public so that the existence of such a defect or a marked tendency to it may be sufficient cause to prevent marriage. Theoretically that is good, but practically good for nothing. Love is proverbially blind, and young people in that condition will marry in spite of obstacles, no matter how great.

(*b*) Isolation of hereditary defectives must also be dismissed as impracticable.

(*c*) Probably the most effective method is some one of the various operations for sterilization; but as yet they lack the support of public opinion, and must fight their way into legislative approval.

(*d*) Another suggestion concerns the education of the medical profession, ophthalmologists especially, in order that we may learn the ultimate reasons for the inheritance of a given defect by one member of a family and not by another. While that is also a consummation devoutly to be wished, it is probably far, far off. Of course, much could be learned by a study of the hundreds of family histories already published and plotted. Material for many investigations could be obtained by referring to the Bibliography of Hereditary Eye Defects, collected by the chairman of this committee, and published by the Eugenics Record Office of the Carnegie Institution of Washington, in their Bulletin 21.

We cannot, however, wait for some possible discovery in the distant future. Ophthalmologists, especially members of this section, should at least begin something, and begin it now.

3. In a previous report of this committee, it was shown that the most practical way of attacking this problem was by what may be called the economic route.

Legislators and the public generally are apt to react most promptly when the pocket nerve is touched. Accordingly, in our report made in 1921 we recommended the adoption of some form of legislation for the relief of taxpayers from the cost of supporting children born of parents either of whom is a carrier of inheritable blindness. Briefly stated, that proposed law provided that if it appeared that a person having inherited blindness was about to marry, then any taxpayer might appeal to the county judge for a commission of two or more experts who would examine and report to the judge as to the probable danger that any children from that union might become blind and therefore public charges. And if, in the opinion of such experts, such danger of blindness did exist, then the parties to the proposed marriage would be obliged to give bonds for amounts sufficient for the support of a child during the years of an average life.

This general plan seemed at first such a real step in advance that it was endorsed by this section, and later approved in correspondence by a long list of distinguished geneticists, physicians and others.[1] Indeed, the simple presentation in one state of the bill embodying these conditions drew forth a discussion of eugenics that proved more instructive than volumes of propaganda. Still the bill, as then proposed, was far from perfect. Constitutional and procedural objections arose, so difficult to overcome that the legal aspects of such a law are still under consideration. It is probable that a satisfactory form can be agreed on and the measure can again be presented for action.

4. One great objection up to the present time is that the cost of hereditary blindness has not been studied sufficiently to warrant statistical statements concerning it. Therefore, the point that this committee wishes to emphasize is the duty of ophthalmologists to ascertain, in as many instances as possible, not only the proportion of the hereditary blind to other varieties but also what has been the cost of given families to given communities.

The term "cost" in this connection means the amount expended either by the parents of a child or by the city or county for him. If the parents pay for the child while an inmate of a state school for the blind, then the board, tuition, guidance and care at school and during vacations are private charges. Nevertheless, they are part of the cost of the blindness and should be counted as such. If a child is kept at home, the same items should be charged to the cost if they exceed the average expended for a normal child of the same social grade. When the parents cannot pay part or all of the support of the blind child, that cost, of course, is assessed on the taxpayer.

Then, when the limit of school age is reached, not only must an adult, if unable to support himself, be supported, but, by his idleness, he becomes a direct loss to the community—a loss that economists have calculated quite exactly—though it varies in different localities.

6. The next question is, How can these or similar data be obtained? For that, we naturally turn first to state schools for the blind.

* Read before the Section on Ophthalmology at the Seventy-Fifth Annual Session of the American Medical Association, Chicago, June, 1924.

1. The following are a few of those who have also endorsed the principle involved in the legislation here referred to, with the positions then held by them: M. P. Ravenel, M.D., president, American Public Health Association, Columbia, Mo.; William M. Sweet, M.D., president, American Ophthalmological Society, Philadelphia; Adolf Meyer, M.D., president, American Neurological Association, Baltimore; A. M. Barrett, M.D., president, American Psychiatric Association, Ann Arbor, Mich.; W. A. White, M.D., president, American Psychopathological Association, Washington, D. C.; G. Kirby Collier, M.D., president, National Association for Study of Epilepsy, Rochester, N. Y.; Milton J. Rosenau, M.D., professor of preventive medicine and hygiene, Medical School of Harvard University, Brookline, Mass.; William Burt, bishop of western New York, Buffalo; Harry Olson, chief judge, municipal court, Chicago; W. W. Campbell, lawyer, state senator, Lockport, N. Y.; James F. Rooney, M.D., president, Medical Society of the State of New York, Albany, N. Y.; Leonard W. H. Gibbs, lawyer, state senator, chairman, Committee on Public Health of New York, Buffalo.

The superintendents and other officials of such institutions are usually alive to the importance of the subject and ready to give all the information desired as to pupils and other known afflicted relatives, provided, of course, that no names or other means of identification are published.

When ophthalmologists have not the time or opportunity to obtain these data, valuable assistance can often be obtained from students of economics or of eugenics in some neighboring university.

The collection of such data seems at first glance almost unworthy of the attention of busy practitioners. But the economic reason for the prevention of hereditary blindness proves now to be quite as important to the legislators as was the economic reason for the prevention of ophthalmia neonatorum when presented first to them by the chairman of this committee nearly half a century ago. That struggle was continued through years of indifference by a large part of the profession and of the public. But when ophthalmologists at last demonstrated to legislators how much it cost to support those needlessly blind, then, and not till then, was philanthropy reinforced by self-interest, and the legislative victory over ophthalmia spread from state to state. So do we hope it may be now.

In view of this, the committee would recommend that:

1. Ophthalmologists and other medical men, especially those connected with schools for the blind, interest themselves, either personally or by proxy, in a study of the number and cost of those whose defect is hereditary and as far as possible of their relatives similarly affected.

2. Teachers of economics and eugenics should be requested and assisted to conduct investigations along these lines.

3. Copies of such data, wherever obtained, whether published or in manuscript form, be sent to the Eugenics Record Office of the Carnegie Institution, Cold Spring Harbor, N .Y., or to the chairman of this committee.

4. All medical men be urged to join, wherever possible, in this crusade against the propagation of hereditary defects, particularly hereditary blindness, especially when an opportunity is offered to reach legislators, lawyers, clergymen or other teachers. In that way we may confidently hope to effect a gradual lessening of the suffering, sorrow, needless expense and blindness in this and in every other nation.

LUCIEN HOWE, WILLIAM T. BELFIELD,
HARRY H. LAUGHLIN.

Clinical Notes, Suggestions, and New Instruments

PARALYSIS OF THE LEG FOLLOWING ILLUMINATING GAS POISONING *

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A white man, aged 27, while residing in Detroit, went to his room at 9 p. m., Jan. 10, 1924, and retired about an hour later. A small gas heater without a chimney connection was left burning. The patient knew nothing further until January 13, when he awoke and found himself in a hospital. At this time his mind was clear, and he experienced no pain, but he felt weak. A few days later, he called his physician's attention to the fact that he had an anesthesia and paralysis of the right leg and foot. About this time a sore spot was noticed over the right tuberosity of the ischium. This area became larger and more indurated and painful. The patient was in a hospital for six weeks, during which time he lost 30 pounds (13.6 kg.).

When examined at Mount Sinai Hospital, Cleveland, February 27, there was marked emaciation, and the general appearance was that of advanced malignancy. There was a large, painful, indurated mass, the size of a coconut, over the right tuberosity of the ischium, which was semifluctuating. There was a complete flaccid paralysis of the foot and leg, with characteristic toe-drop and complete anesthesia corresponding to the distribution of the peroneal nerve. The tips of the great and second toes were gangrenous.

Because of the loss of weight in six weeks and the cachectic appearance, the tumor mass in the right buttock was thought to be malignant, especially since we had previously seen a large, semifluctuating tumor mass in the same region presenting the same appearance and characteristics, which proved to be a sarcoma. Examination of the blood showed: leukocytes, 12,000; hemoglobin, 70 per cent.

February 28, Dr. C. H. Heyman made an incision into the tumor and aspirated several ounces of pus which on culture contained *Staphylococcus pyogenes-aureus* and hemolytic streptococci. The wound was irrigated with surgical solution of the chlorinated soda, and subsequently healed completely.

The gangrenous areas on the toes healed slowly. The patient was given a right-angled splint to prevent toe-drop, and physiotherapy daily.

May 20, the degree of paralysis had not progressed or retrogressed, but the area of anesthesia seemed to extend over a slightly lesser area. The patient had made a very satisfactory and progressive increase in weight.

The pathologic changes that occur in illuminating gas poisoning may be thus summarized:

The blood and viscera are a cherry red. There are marked degenerative changes in the muscles and, in most instances, small, scattered hemorrhages, and intense hyperemia of the organs. Marked cerebral changes occur. Peripheral neuritis and less common poliomyelitis and disseminated encephalomyelitis have been seen. The most important nerve lesions, however, are in the brain, particularly small, scattered hemorrhages with paralysis, which may be monoplegic or hemiplegic. This paralysis of cerebral origin is apt to be permanent.

In view of the fact that the anesthesia in the case here reported seems to have subsided in extent, we are hopeful that recovery, even though not complete, may ensue.

630 Osborn Building.

* From the Orthopedic Department, Mount Sinai Hospital.

REPETITION OF MISSED LABOR

CHARLES W. SAWERS, M.D., WATFORD, ONTARIO

REPORT OF CASE

Mrs. W. B., aged 32, had given birth to two healthy children. Sometime after her period of July 7, 1916, she became pregnant. She noticed that after the fifth month she did not get any stouter. Nov. 6, 1917, a dead fetus was born. It was now seven months past full term.

Nov. 1, 1918, a normal child was born, and still lives. After nursing the child, menstruation became regular till sometime after her period of April 3, 1922, when she again became pregnant. All went as usual for about five months, when she noticed that the increase in size had ceased. Dec. 17, 1923, she gave birth to another dead fetus—eleven months after full term.

In both cases the child died when about five months in utero, and the mother made an uneventful recovery.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION. W. A. PUCKNER, SECRETARY.

BUTYN (See New and Nonofficial Remedies, 1924, p. 32).

The following dosage form has been accepted:

Butyn Ointment-M. E. S. Co.: Butyn, 1 per cent.; water, 1 per cent.; wool fat and petrolatum, 98 per cent. Put up in collapsible tubes, for application to the eye.

Prepared by Manhattan Eye Salve Co., Louisville, Ky.

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SATURDAY, JULY 26, 1924

EVEN COUNTRY LIFE MAY HAVE SHORTCOMINGS

On every side, one may hear the slogan, "Give Nature a chance," particularly when a somewhat obscure malady or even one of the familiar disorders with undetermined causation presents the problem of restoring health. He would, indeed, be a dull student of the human organism and a blinded observer of its functions who failed to recognize the potent recuperative powers represented by the *vis medicatrix naturae*. Sometimes Nature, as manifested in our daily environment, performs wonderful cures; witness the beneficent virtues of sunlight and outdoors in the healing of rickets or the relief of certain forms of tuberculosis. Sometimes, on the other hand, it is the natural defenses of man himself—his phagocytes, his antitoxins, his metabolic and excretory functions, his inherent cellular growth propensities—that bring about the much desired escape from bodily menaces. The growing appreciation of these helps to health, which may usually be secured without cost and for the mere asking, sometimes lead to a false sense of security, or at any rate a distorted estimate of remedial values in the one or the other class of Nature's helps. The wealth of fresh air and sunshine, the relative abundance of wholesome food and the boundless opportunities for exercise in the open that country life affords are not always a guarantee against the inroad of subtle menaces. Malnutrition and undersize among school children are not unknown in the rural districts. Goiter may make an insidious entrance into such communities, despite the apparent beneficence of Nature's gifts.

By way of illustration may be cited the outcome of a recent goiter survey in some of the counties of Michigan, one in the Upper Peninsula, one in the upper part of the Lower Peninsula, and two in the central part of the state. These counties were selected because two of them were known to have little or no iodin in their water supply, and in two the iodin content is the highest of any section in the state, though much less than that in the waters of nongoitrous areas of the United States. Among more than 2,000 children examined in one of the smaller cities, thyroid enlargement was found to be present in 50 per cent. In the rural and village schools outside this city, but in the same county, 62 per cent. of the children were found with thyroid enlargement—54 per cent. of the boys and 71 per cent. of the girls. It was noted that the water supply of the city of Cadillac shows a very slight trace of iodin, whereas no iodin is found in the water in the rural districts of the county. This is only one of a series of illustrative systematic surveys that have led government investigators[1] to point out that the average city dweller probably has more opportunities to secure iodin in his food supply than has the rural dweller, the food supply of the former being shipped in, to a greater or less extent, and therefore being somewhat more varied than that of the rural dweller. Sea foods, ordinarily only infrequently supplied to rural districts, are more common in the markets of the city. Another possible factor mentioned is that medical treatment is more generally available in the city than in the country. Even the oft berated physician can sometimes supplement the good works of fresh air and sunshine.

It is a wholesome sign that the authorities responsible for health in the states and nation are awakening to the goiter situation in this country. The efforts of the state of Michigan, as recently reported by Olin,[2] indicate the needs and the possibilities presented by the goiter areas. It would be advantageous if the normal sources of iodin for the population in nonaffected districts could be accurately ascertained. McClendon,[3] after examining numerous specimens of water from various sections of the United States, and tabulating the various goiter surveys that had been made, stated that it was his belief that the amount of simple goiter in the United States varied inversely with the amount of available iodin in the food supply of the areas. His data were so meager, and the areas of the country covered so large, that it was decided to choose the areas in Michigan to be surveyed for goiter only after a preliminary water survey for the iodin content had been made. Such figures as already have been published from Michigan indicate wide variations in the iodin content of the potable waters, in correspondence with the incidence of goiter among the school population. The problem of the best mode of prevention is one that cannot be lightly passed over. It has been proposed to require by law that all salt sold for human and animal consumption in goitrous areas contain sufficient iodin, so that the minimum requirements of 300 mg. a year would be normally taken in by every one in the area. Olin believes that supplying iodin deficiency through a household necessity would eliminate virtually all administrative detail, would do away with the necessity of

1. Goiter Survey in Wexford County, Michigan, Pub. Health Rep. **39**: 663 (April 4) 1924.
2. Olin, R. M.: Iodin Deficiency and Prevalence of Simple Goiter in Michigan, J. A. M. A. **82**: 1328 (April 26) 1924.
3. McClendon, J. F.: Simple Goiter as a Result of Iodin Deficiency: Preliminary Paper, Method of Determining Iodin, J. A. M. A. **80**: 600 (March 3) 1923; Iodin and Prevention of Goiter, Science **58**: 269, 1922.

continued educational effort, would arouse individual action, and would solve the problem for both urban and rural districts. Where possible, individual therapeutic attention at present remains as the most satisfactory and dependable procedure.

SURGICAL TREATMENT OF ANGINA PECTORIS

It is, perhaps, fortunate that the operations recently devised for the relief of angina pectoris are of such a character that they demand an intimate knowledge of rather minute and complicated anatomic structures and an unusual degree of technical skill. Were this not so, there might have been, by this time, a great number of operations on patients with all types of precordial pain, with results that would have been appalling as to mortality and inconclusive as to the justifiability of this experimental procedure. The surgical method is yet in the experimental stage; and for an experiment of such gravity to be justified and to permit of interpretation, the conditions under which it is performed must be carefully laid down, the technic should be as nearly perfect as possible, and the end-results critically noted. Promiscuous operation by imperfectly qualified surgeons on loosely selected cases would introduce so many variables into the problem as to make its solution well nigh impossible.

Surgery as a treatment for angina pectoris will no doubt always have a limited scope, because it is so largely a relief of symptoms only and because it fails to relieve the underlying cause of the paroxysms, the changes in the aorta, the coronaries or both. In other words, surgery may relieve, but it does not cure. No one can yet define the exact limitations of the field. The selection of cases suited for operation will be a task for the physician as well as the surgeon. And, unless angina pectoris changes its character, there will be disappointing and tragic sudden deaths after operation as happened without operation. Nevertheless, to rob angina pectoris of some of its horror of pain is a praiseworthy accomplishment, and for that reason further cautious trial is proper. Besides, relief from the oft-repeated paroxysms may even tend to lengthen life as well as to make it more endurable.

The views here expressed reflect largely those of the lecture [1] by Professor Wenckebach recently delivered before the Royal College of Physicians of London. Wenckebach, while stressing chiefly the operation on the depressor nerve rather than the one commonly practiced on the cervical sympathetic nerves or their ganglions, takes the sound view that, while results thus far are encouraging, the whole procedure is still on trial. He pleads for more precise knowledge as to the anatomy and physiology of the nerves involved and for close cooperation between physician and surgeon in the work of investigation as well as in the practical treatment of patients.

1. Wenckebach, K. F.: A Lecture on Angina Pectoris and the Possibilities of Its Surgical Relief, Brit. M. J. 1: 809 (May 10) 1924.

The article by Professor Wenckebach reveals him as a convert to the aortic rather than the coronary or myocardial theory of the pain of angina. Furthermore, he recognizes as a distinct clinical group those cases in which the precordial pain—"angina"—is due to acute obstruction of the coronary artery. This is a subject that for more than a decade has engaged the attention of many American clinicians and medical writers, and it is pleasing to note that such a leader of continental medical thought is awake to the full significance of such cases, though even yet perhaps not fully recognizing their relative frequency. The prominence given this subject by the character both of the speaker and of the audience should attract attention not only in England but also in France, Germany and other countries. Too many cases permitting clinical recognition pass as heart failure, acute dilatation, food poisoning, acute indigestion or as the "decubital angina" of the French.

The article by Professor Wenckebach is a model of what such an address should be—comprehensive yet with omission of nonessential and confusing details, orderly both in statement of fact and in presentation of theory, and lucid. Its English is such that the author need not fear comparison with even the best of native British writers. The lecture is well worth reading by all those interested in angina pectoris, its clinical manifestations, the theories as to causation and its surgical treatment.

CURRENT CRITICISMS OF MEDICAL EDUCATION

These are days of flux in matters pertaining to medical education. Commissions, foundations, societies, faculties and even legislatures are engaged in the investigation of the medical curriculums. We hear the old, familiar cry that "something is fundamentally wrong" in our current system; and the outsider, listening as an untutored observer unfamiliar with the history of science, may even begin to believe the old Latin proverb that there is more danger from the physician than from the disease. A generation or more ago, when bacteriology was beginning to evolve as a fruitful science and biochemistry became distinguishable from the elementary medical chemistry of an earlier day, when the way was being paved for the discovery of the roentgen ray and radium and when sanitation began to build on a securer foundation of scientifically demonstrable facts, there were vigorous pleas for the introduction of the laboratory methods of instruction into medicine and for the education of the student in the ways by which scientific discovery was proceeding at a rapid pace. The entrance of the specialist, uniquely equipped for specific tasks of diagnosis and therapy, was hailed as a sign of progress.

Today, a reaction against the results once so ardently demanded of a newer scheme of scientific medicine is clearly discernible. We are told that the highly desir-

able general practitioner is disappearing; that the so-called specialist has great limitations, and that the medical student is being converted to research, whereby he becomes unpractical. The momentary attitude of gloom is not inspired by obscure writers or insignificant physicians; it is often voiced from the seats of the mighty.[1] Imbued with the belief that the supreme misfortune has been reached, "where theory outstrips performance," the critics are aiming their shafts at many of the now established procedures that were a novelty in the medical school at the beginning of the present century. The pedagogy of medicine has again become a popular theme for discussion.

It is, beyond question, desirable that progress be initiated from within, rather than enforced from without, on the profession. There is the undeniable duty of evaluating the criticisms and promoting wholesome reforms in medicine, as in other fields of endeavor. The danger to be avoided, however, lies in the enthusiasm that follows the extreme swings of the pendulum from one educational scheme to another designed to replace it. Unforeseen difficulties may have arisen in the development of the medical curriculum, but that does not necessitate either its abolition or the adoption of retrogressive changes. The old, muddy road has been replaced by a straight and modern highway, but it has reached only the crushed stone stage; it needs the finishing touches to render it smooth and serviceable. He who can retain his poise by having a long distance perspective is alone likely to profit by watching the rapidly changing panorama of educational theories.

Criticisms are serviceable, even though they may not always be constructive; and even if drastic or unreasonable, they may sometimes prove to be most helpful in attracting greater attention to essential facts. The critic who ventures, at this time, to distinguish between essential and unessential subjects in preparation for medicine or any other career is entering dangerous waters. The student can become well grounded through the medium of almost any course, just as, to quote Cushing, medicine may be successfully taught with any course as a central point of radiation. There are few "sacred" subjects; likewise, few so profane that no good can come from them. It is rarely the subject taught that is primarily at fault. The praise that one critic accords to advanced algebra may well be given by another to manual training.

It has been urged that practice, research and teaching are not sharply differentiated by teachers. Can they properly be discriminated? Do they not all employ common methods? And so, too, we look on the demand for "learning" instead of "teaching"—a demand expressed on more than one commencement platform—as merely a play of words. Of course our students should be made to understand that education consists in putting energy into a task in order to recover knowledge by the effort; in depending on personal initiative rather than spoon feeding by an educator nurse. Yet who will deny the magic influence of a great teacher? And if such a one is discovered, no one asks whether he bears the stamp of Ph.D., M.D., or any degree whatever.

Let us not boldly decry research at a moment when its real value is beginning to dawn on us. There will never be more than a few "researchers" in any group. The important thing is to be able to distinguish pseudoresearch from useful investigation, and not to embarrass the latter in its proper sphere. Traditional criticism, says Lee, can always find sympathetic ears. It long ago became the custom to deride the physician. Montaigne and Molière inherited it, and so have the critics of today. Let the physician beware lest in criticizing himself and his kind he forget that the chief enemy he has to fight is ignorance.

1. Series of papers before the Annual Congress on Medical Education, Medical Licensure, Public Health and Hospitals, Chicago, March 3, 1924, J. A. M. A. **82**: 833-848 (March 15) 1924.

THE SUPRARENALS AND METABOLISM

That the thyroid glands profoundly affect metabolism is well established. Their influence is attested in various readily observed circumstances. A subnormal activity results in a reduction in the metabolism, whereas an overfunction increases the irritability of the nervous apparatus and augments the metabolism. Stimulation of the chemical exchanges in the body can, in fact, be brought about by administration of thyroid substance and also by the highly specific derivative thyroxin. All these facts have become part and parcel of medical knowledge. They are made use of every day in the clinical routine of the physician. He has occasion to discover hyperthyroidism or hypothyroidism through measurements of metabolic rates, and he employs thyroid product to stimulate metabolism. Such experiences have helped to give the thyroids a paramount importance in certain types of metabolic disorder, or at any rate have placed them in a position of comparative preeminence.

There have been numerous indications of late, however, that the suprarenals also may be concerned with what has been described as "calorigenic action," an expression coined to signify the specific stimulus to metabolism given by such substances as thyroxin and epinephrin. Not long ago, Boothby and Sandiford[1] reviewed the evidence that attests that epinephrin in amounts within the probable capacity of the suprarenal glands to secrete accelerates the rate of heat production in the intact animal body, and therefore permits the tentative generalization that one function of the suprarenal glands is to furnish a secretion that accelerates the velocity of an as yet unknown chemical reaction, or reactions, in the direction accompanied by the liberation of heat. Epinephrin is known to bring about a mobilization of sugar in the blood, but such "carbo-

1. Boothby, W. M., and Sandiford, Irene: The Calorigenic Action of Adrenalin Chlorid, Am. J. Physiol. **66**: 93 (Sept.) 1923.

hydrate plethora" will not account for the pronounced calorigenic effects of suprarenal secretion.

Thyroidectomy brings about a decrease in metabolism; but several investigators have found that subsequent suprarenal extirpation causes a further reduction. Such experiments suggest that the calorigenic effect of the suprarenal secretion is not an indirect one due to an action on the thyroids. At present there is, indeed, reason to conclude that the metabolic effects of the thyroid and suprarenals may be independent, and that epinephrin does not require the cooperation of the thyroid in producing an increased metabolism. This is substantiated by investigations of McIver and Bright,[2] who have excluded also the liver from responsibility for the suprarenal effect. Evidently the thyroids will meet some competition of interest in the future studies of the factors governing heat production in the body.

Current Comment

OBSTRUCTION OF THE LACTEALS

The appearance of considerable amounts of fats, or fatty acids and soaps derived from them, in the feces is always significant of serious disorder. As the pancreatic juice has a major part in the digestion of fats as a necessary preliminary to their absorption, and the bile is concerned with the passage of the products of fat digestion through the intestinal wall into the terminals of the lymphatic system, disturbance of pancreatic secretory functions or the discharge of bile into the bowel is bound to interfere with the alimentary utilization of these foodstuffs. When, as sometimes happens, both bile and pancreatic juice are excluded from the intestines, the loss of fats through the feces may be exceptionally large. The clinical problems involved in such conditions are by no means new. Fatty stools have been associated with pancreatic disease for more than a century. Less consideration is usually given to the fact that profound interference with the absorption of fats may be brought about also by obstruction of their paths of exit from the bowel through the lymphatic capillaries. This has long been known to occur in widespread tuberculous disease of the intestines and in tuberculosis of the mesenteric glands. Several instances of fatty or "chylous" forms of diarrhea from such causes have recently been recorded by Guy's Hospital, London.[3] Tetany, and possibly in children late rickets, may occur in this condition. Both manifestations may be related to the calcium deficiency caused by the excessive fecal loss of calcium in the form of soaps. Ryle[3] states that similar fatty stools, a similar abdominal enlargement and tetany are recorded also in the celiac affection and in sprue. Hence, he regards it as not improbable that an inflammatory occlusion of some part of the lacteal system may be responsible for the common symptoms in these diseases. One dietotherapeutic consideration is obvious. Restriction in the intake of fats should be enforced so long as there are indications of impairment of their utilization. Ryle believes that some cases of fatty stools attributed to pancreatic disease without accurate confirmation have really been due to other factors. If the importance of pancreatic disease has been overstressed as a cause of steatorrhea, it may well follow that the possibilities of disease involving the paths of absorption have not received the consideration they deserve from clinicians when fatty diarrhea occurs.

2. McIver, M. A., and Bright, E. M.: Studies on Conditions of Activity in Endocrine Glands, XII, Changes in Metabolism Following Adrenal Stimulation, Am. J. Physiol. **68**: 622 (May) 1924.
3. Ryle, J. A.: Fatty Stools from Obstruction of the Lacteals, Guy's Hosp. Rep. **74**: 1 (Jan.) 1924.

A MARGIN OF SAFETY IN LIVER FUNCTION

A human-made machine that meets the approval of the experts is provided with "factors of safety"; that is, it is constructed so as to be capable of withstanding not only such stresses as it may ordinarily be subjected to, but even much larger demands. When Meltzer[1] inquired, a few years ago, whether the structures and the functions of the living animal body are provided with comparable factors of safety, the question had never previously been clearly raised, or, at any rate, had not been made the subject of direct investigation. Those who have argued that Nature is economical and wastes neither material nor energy were evidently depending on a belief rather than dealing with a fact. We know that two kidneys are not necessary for comfortable existence; at least two thirds of both these organs have been removed without serious detriment to life or to the secretory function of the kidneys. Hence, the margin of safety in the renal structures is equivalent to at least twice its normal needs. Part of the intestine is undoubtedly a luxury, if we may judge by the survival of persons from whom the surgeons have removed a portion of the gastro-intestinal canal. Recent experiments by Rosenthal[2] can be evaluated to give some facts in respect to the margin of safety for the liver. This organ serves, among many other functions, to eliminate certain types of compounds from the blood, so that they are excreted with the bile. The dye phenoltetrachlorphthalein belongs among them, and it disappears with comparative slowness after introduction into the circulation, whenever the liver functions are seriously impaired. For this reason, the use of the dye under controlled conditions has been proposed in Rosenthal's method for testing hepatic function.[3] In principle, it depends on the determination of the rate at which the dye is removed from the blood stream, following its injection intravenously. The normal rate of disappearance of the phenoltetrachlorphthalein is quite uniform in a given species of animal. Rosenthal[2] has found that one eighth or more of the liver can be removed before any sign whatever of functional impairment appears as determined by his test; even with larger ablations, the result is expressed in delayed elimination, not necessarily in inability of the organism to survive. Ponfick found that removal of half the liver did not always interfere with the life of the animal:

1. Meltzer, S. J.: The Harvey Lectures for 1906-1907, Philadelphia, J. B. Lippincott Company, 1908.
2. Rosenthal, S. M.: The Relation of Impaired Function to the Amount of Normal Liver Tissue, J. Pharmacol. & Exper. Therap. **23**: 385 (June) 1924.
3. Rosenthal, S. M.: A New Method of Testing Liver Function with Phenoltetrachlorphthalein, J. A. M. A. **79**: 2151 (Dec. 23) 1922.

Such experimental facts illustrating the lavishness of Nature's provision for our well being have at least a twofold significance. They support the doctrine of animal factors of safety; and they also remind us that an organ can experience damage that may not betray itself in so-called functional tests.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education, public health, etc.)

ALABAMA

Hospital News.—The Children's Hospital, Birmingham, which is supported by the Community Chest, was recently opened.

New System of Reporting Communicable Diseases.—A new communicable disease report card has been adopted in Alabama which in the presence of a stationary or declining death rate has increased the reports of malaria about 500 per cent., typhoid fever about 55 per cent., tuberculosis about 120 per cent. The old card was complex, contained too many items required, and physicians failed to keep a supply of them on hand. The new card is a modification of that devised and used with success by Leslie C. Frank, late director of public health, Dallas, Texas, and is very simple. Six cases may be reported on the same card on one date. The physician reporting does not even have to sign his name, as it has already been stamped on the card by the addressograph. One card is mailed each week to every physician in the state, which thus calls his attention to this duty, and stimulates him periodically to recall his cases of notifiable diseases. The card already addressed and stamped is returned by the physician whether he has any cases to report or not, going through the county health officer where there is one, or to the state epidemiologist direct where there is not.

CONNECTICUT

Personal.—Dr. Marie Pichel Levinson, Cincinnati, has been appointed medical inspector of the public school of New Britain, Conn.

Grand Jury Foreman Abroad.—Benedict M. Holden, foreman of the grand jury which broke up Connecticut's ring of fake doctors, while visiting in England has been invited to address the Royal Medical Society on the diploma mill investigation in Connecticut.

ILLINOIS

Personal.—Dr. Edith B. Lowry, St. Charles, has been appointed chief of the division of child hygiene of the state department of public health. Dr. Lowry formerly was in the Chicago Health Department, and the U. S. Public Health Service.

Adams County Medical Society.—The annual picnic of the Adams County Medical Society will be held at the Big Lake Hunting and Fishing Club on the Mississippi River, August 7.——The name of the society's bulletin has been changed to the *Quincy Medical Bulletin.*——Dr. Harold Swanberg, Quincy, has been appointed chairman of the local arrangement committee for the 1925 convention of the state medical society which will meet in Quincy.

Chicago

Vaccination in Chicago.—The Chicago Health Department vaccinated against smallpox 2,886 persons during June, which made a total for the first six months of the year of 124,284.

Personal.—Dr. Dallas B. Phemister, Chicago, gave an address on "Diagnosis and Treatment of Bone Tumors," before the Northeastern Indiana Academy of Medicine at Kendallville, July 3.

KANSAS

Kansas Physicians Must Be Citizens.—Rules regarding medical licensure recently adopted by the Kansas Board of Medical Registration and Examination include a clause that to secure a certificate of license to practice medicine and surgery in Kansas a foreign graduate must be a naturalized citizen.

KENTUCKY

Illegal Practitioner Fined.—H. F. Pratt, Louisville, was fined $50, July 2, on a charge of practicing medicine without a license.

Chiropractor Guilty.—T. M. Broughton, chiropractor, Mayfield, was found guilty by a jury recently of practicing medicine without a license. The three grand jury indictments against Broughton returned by the June grand jury, it is reported, will come up for trial in November.

Physician's License Revoked.—The state board of health has revoked the license to practice medicine of Dr. Jesse S. Bean, Louisville, for violation of the Harrison Narcotic Law, it is reported. Dr. Bean was arrested, December 11, and pleaded guilty, May 31. He was fined $1,000.

LOUISIANA

Warning Against Anthrax.—It is reported that eight cases of anthrax were reported in Louisiana in June, and that the state department of health has issued a warning which informs the public of the presence of this disease and how to avoid it.

Committee Approves Maternity Bill.—The senate health and quarantine committee unanimously approved, July 4, the emergency senate bill to accept the provisions of the Sheppard-Towner Maternity Act. Dr. Oscar Dowling appeared before the committee for the measure, it is reported.

Lepers Cured at Carville.—The National Leprosarium at Carville, founded in 1894, was formerly a planter's mansion. The main building is still reminiscent of the old South with tall white porch columns and large rooms. The patients live in cottages, each in a separate room, and the cottages are connected. There is a central heating plant and separate dining rooms for men and women. The whole plant is in a park of several hundred acres. It is reported that the director of the leprosarium stated that more than forty lepers treated at Carville have been cured and returned to their homes. The capacity of the institution is about 200. There is a waiting list.

MARYLAND

Baby Clinic Opened.—Announcement has been made by the Baltimore city health department of the opening of a new baby clinic at 1774 East North Avenue. Dr. Herman J. Dorf is in charge, and is in attendance from 2 to 4 p. m. each Monday for conference. A trained nurse is also in attendance. This clinic brings the total of such stations operating in Baltimore to fifty-six.

Food Inspections.—Eight dairymen were barred for two weeks from shipping milk into the city by order of the Baltimore City Health Department, when specimens, taken at the farms, showed the milk was not up to health regulations. At the end of the suspension period, tests will again be made to learn whether conditions have improved.——Seven tons of food, mostly canned goods, were condemned, July 16, by Baltimore City Health Department inspectors. More than six tons of canned goods were condemned at a fruit and vegetable packing plant in Canton, where food had spoiled through improper methods of canning.

MASSACHUSETTS

A Distinguished Visitor.—Dr. Leonard Findlay, head of the Children's Department of the University of Glasgow, Scotland, who came to this country recently as the guest of the Section on Diseases of Children of the American Medical Association, terminated his visit in Boston where he was tendered a dinner by members of the department of pediatrics of the Medical School of Harvard University. Dr. Findlay is an honorary member of the American Pediatric Society.

Average Donation to the Harvard Medical Dormitory.—At the annual meeting of the Harvard Medical School Alumni Association, which was presided over by the president, Dr. Elliot P. Joslin, in Boston, June 18, the committee for soliciting funds for the dormitory for medical students, announced that in March enough money had been secured to purchase the site and that the title had been passed over to the president of the university. The original committee of six has been enlarged to forty-two, and circulars requesting donations have been sent to every person who has been a student in the school. Donations had then been received from 1,338 physicians who contributed an average of $70 to the fund.

MICHIGAN

Detroit's Smallpox Epidemic Ends.—During the week ending July 5 the number of cases of smallpox reported in Detroit was 10, which is below the normal number of cases reported per week for the last five years. Since a similar state of affairs existed the previous week, the epidemic of smallpox in Detroit which comprised 1,508 cases and 140 deaths from January through June, appears to be ended.

Chiropractors Arrested.—It is reported that warrants have been issued for the arrest of nine chiropractors in Benton Harbor, St. Joseph, Niles and Buchanan on a charge of practicing medicine without a license. The warrants were signed by a number of osteopaths.——Warrants were issued, July 4, for the arrest of Max Kasler and I. C. Hall, chiropractors of Niles on charges of practicing medicine without a license. The affidavits were signed by the city health officer.

Nontechnical Medical Lectures.—During the year 1923-1924 the Wayne County Medical Society in cooperation with the Educational Extension Department of the University of Michigan was responsible for seventy-six lectures in nontechnical language on the scientific phases of modern medicine. The total attendance at these lectures in Detroit was 47,000. The same educational movement outside of Detroit was responsible for 170 lectures with a total attendance of 32,000.

Proposed Constitution and By-Laws.—The report of the committee appointed last year to present a new constitution and by-laws for adoption at the annual meeting of the Michigan State Medical Society to be held at Mount Clemens in September, appears in the July number of the *Journal of the Michigan State Medical Society*. Among other things, it is recommended that the dues be raised to $10 per annum, that the nomination and election of the president be made from the floor of the general meeting instead of the house of delegates, and that nominations for councilors be made from the respective districts they will represent.

Personal.—Dr. James D. Munson completed forty-five years in the service of Michigan state hospitals when he retired as superintendent of the Traverse City State Hospital, June 30. Dr. Munson is 75 years of age.——Dr. William J. V. Deacon, former director of vital statistics for Kansas, has been made director of the bureau of communicable diseases and vital statistics for the Michigan State Board of Health, Lansing.——Dr. Elmer F. Merrill, department of roentgenology, University of Michigan School of Medicine, Ann Arbor, has resigned to enter the department of roentgen-ray therapy at the Mayo Clinic, Rochester, Minn.——Dr. Harriet S. Taylor, department of pathology, University of Michigan School of Medicine, Ann Arbor, has resigned on account of ill health.——Dr. Frank N. Wilson, associate professor of medicine, University of Michigan School of Medicine, Ann Arbor, has been promoted to professor of medicine, and Drs. George R. Herrmann and Phil L. Marsh have been promoted to assistant professors of medicine. Dr. Frederick G. Novy, professor of bacteriology and director of the hygienic laboratory, has been elected a member of the National Academy of Sciences.——Sir Robert F. Bridges, poet laureate of England, recently addressed the junior and senior classes at the University of Michigan School of Medicine on reminiscences of his practice in London in the early sixties.

MISSOURI

Dr. Manning Sentenced.—Dr. Thomas S. Manning, St. Louis, was sentenced to ten years in the penitentiary at Leavenworth, Kan., and fined $6,000 by Federal Judge Trieber for the illegal use of narcotics. This is Manning's third conviction on similar charges in the last four years.

Physician's License Revoked.—The license of Dr. William R. Harman, Springfield, according to reports received from the Missouri State Board of Health, was revoked, January 8. Dr. Harman was found guilty of selling, bartering and giving away certain derivatives and salts of opium, morphin and cocain.

Hospital Superintendent Appointed.—Dr. Emmett F. Hoctor, Nevada, has been appointed superintendent of State Hospital No. 3, at Nevada, to succeed Dr. R. C. Robertson, acting superintendent. Dr. Hoctor is a graduate of the Creighton University College of Medicine, and has been assistant physician at State Hospital No. 3 since November, 1923.

Research Fellowship in Industrial Hygiene.—The School of Mines and Metallurgy of the University of Missouri, cooperating with the U. S. Bureau of Mines, offers a fellowship in industrial hygiene, which is open to graduates who have a bachelor of science degree in public health or equivalent, or a bachelor's degree in the arts and sciences or equivalent, and an M.D., and the proper training in biochemistry, pathology and physics. The income from the fellowship is $800 per annum. The greater portion of the time will be spent in research at the university, and the problems for the following year will deal with the action of rock dust on the lungs.

MONTANA

Personal.—Dr. Frank D. Pease, Missoula, and Dr. Eri M. Farr, Billings, were elected president and vice president, respectively, of the Montana Public Health Association at the annual meeting in Helena, recently.

NEW YORK

Hospital News.—Twenty-two of the twenty-five physicians on the staff of the Oswego Hospital, Oswego, decided, June 15, to resign, it is reported.

Chiropractor Loses Damage Suit.—The jury in the case of Brown *vs.* Francis T. Shyne, chiropractor of Utica, May 23, rendered a verdict giving the plaintiff $10,000 damages. The case was based on the claim of the plaintiff that her spine was seriously injured as a result of the "adjustment" given by "Dr." Shyne.

Pocket Manual on Industrial Diseases.—The Division of Industrial Hygiene has prepared a cross reference pocket manual on industrial diseases for the special use of physicians in New York who are interested in industrial hygiene. The book will be ready for distribution in the near future and the number available will be limited. Physicians who desire a copy of this manual should apply without delay to the director of the Division of Industrial Hygiene, Albany, or to the New York City office, 124 East Twenty-Eighth Street.

New York City

Transferred from Bellevue to Harlem.—Dr. Mark L. Fleming, assistant general superintendent at Bellevue Hospital, has been transferred to the Harlem Hospital as superintendent. Dr. John J. Hill will succeed Dr. Fleming at Bellevue.

Personal.—Dr. John J. McGrath, president of the board of trustees of Bellevue and allied hospitals, has been notified by President Coolidge that his appointment as lieutenant-colonel in the United States Medical Reserve Corps has been confirmed.——Dr. Charles North Dowd, professor of surgery at the College of Physicians and Surgeons, received the honorary degree of doctor of science at Williams College commencement, June 23.——Dr. Mark Hornstein has been appointed attending obstetrician at the Jewish Memorial Hospital.

Health Department's Exhibits.—The *Weekly Bulletin* of the New York City Department of Health of July 12 reviews the work of the Division of Exhibits, which has grown to be an important feature of the department's work. Realizing the difficulties of health education in a cosmopolitan city where many languages are spoken, the New York City Health Department has emphasized the value of visual education which needs no interpreter. The department furnished during the year 1923, 128 exhibits, 1,013 posters, loaned forty lanterns, showed 665 films and acquired nine new ones.

Free Dental Clinic.—The new free dental clinic of Brooklyn, the only one of its kind in the borough, has been opened at 131 Steuben Street, under the direction of the American Frugality Association, Inc. It will assist boys and girls between the ages of 14 and 16 seeking employment who are unable to obtain employment certificates due to dental defects. The clinic will endeavor to meet the need of the part of the public which is unable to pay for dental work. The health department, the Kings County Dental Society and the department of education are cooperating with the Frugality Association in this work. Among those who have worked to obtain the clinic are Dr. Royal S. Copeland and Dr. Laura L. Riegelman. The clinic will be open three days a week.

Source of the Typhoid Epidemic.—The source of the increase in the number of cases of typhoid fever noted in this city for several weeks has been traced to Englewood Brook in the Palisade Interstate Park. On July 19, the number of cases traceable to this source had reached seventy. The New York City Health Department discovered the source of the outbreak and posted warnings, but the state board of health, acting under a recent law, passed at the request of the park authorities, has taken over supervision of health measures in the park north of the New Jersey line. Health Commissioner Dr. Frank J. Monaghan has issued a warning

stating that as the polluted spring empties into the Hudson River the danger from bathing in this river has increased. In addition to the cases of typhoid fever in New York City a considerable number have occurred in northern New Jersey, bringing the total number of cases attributable to this source to more than 100.

OKLAHOMA

Muskogee County Adopts Health Unit.—According to the assistant state health commissioner, the commissioners of Muskogee County recently decided to establish a full-time public health service, making the fourth county in the state to do so. The other counties are Carter, LeFlore and Okmulgee.

Personal.—Dr. S. Ernest Strader, Oklahoma City, has been appointed secretary-treasurer of the Oklahoma County Medical Association for the remainder of the year, vice Dr. E. Lee Jones, resigned.——Dr. Henry C. Ricks, Durant, has been appointed state bacteriologist of Oklahoma.——Dr. Shade D. Neely, Muskogee, has been appointed roentgenologist for the U. S. Veterans' Bureau Hospital No. 90, at Muskogee.——Dr. Walter A. Lackey, Oklahoma City, has been reappointed school physician for two years.

New System of Reporting Communicable Diseases.—The state commissioner of health, Dr. Carl Puckett, announces that arrangements are being perfected whereby Oklahoma physicians will be supplied with printed forms, with postage attached, for the reporting of communicable diseases, the object being to obtain information more quickly and with less effort. Reports may be made to any city, county or state health officer. The *Journal of the Oklahoma State Medical Association* states that the new system is a distinct advance over the old one and that its keystone is the general practitioner. The state laboratory and several cities have efficient laboratory service for those unable to pay, so the question of cost to the individual, this journal adds, will not be a factor in rendering reports.

PENNSYLVANIA

General Warning of Smallpox.—Up to July 19 there had been no abatement in the spread of smallpox in Pittsburgh; on that day five new cases had been reported before noon and the death list had increased to eleven. Apprehension over the growing number of smallpox cases throughout the country has caused Surgeon General Cumming of the U. S. Public Health Service to notify state health officers to exercise the greatest vigilance in vaccination and revaccination.

SOUTH CAROLINA

Personal.—Dr. James E. Daniel, Greenville, it is reported, has been promoted from lieutenant-colonel to colonel in the Medical Officers Reserve Corps, and Dr. Edgar A. Hines, Seneca, has been commissioned a major in that corps.——Dr. Frank H. McLeod, Florence, has been appointed chairman of the special committee which will appear before the governor and the attorney-general to call their attention to the necessity for the prosecution of illegal practitioners.——Dr. Charles R. F. Beall, formerly of Mayesville, has been elected medical director at Waverley Sanitarium, Columbia.——Dr. Walter H. Shealy, Batesville, "has taken over the affair" of the Cherokee County Health Department, succeeding Dr. Walter Boone, Jr., Gaffney.

TENNESSEE

County Health Units Retained.—The Obion County Court voted, July 7, to retain for the ensuing year the services of the county health unit and voted $2,875 to pay the county's part of the expense. The health unit in Obion County is maintained through the cooperation of the county court, a board comprising the mayor and aldermen of Union City, and the state board of health.——Montgomery County also decided to retain its health unit, and Bedford and Hamilton counties to retain their nursing bureaus. Coffee County installed a bureau of maternity and infant hygiene.

TEXAS

Texas Physicians Must Be Citizens.—A report from the Texas State Board of Medical Examiners states that hereafter all foreign applicants before securing a license to practice medicine in Texas, whether by examination or reciprocity, shall have declared their intention of becoming a citizen of the United States and presented a copy of their first naturalization papers.

Mental Hygiene Survey.—The National Committee for Mental Hygiene is conducting a mental hygiene survey of Texas, which will be done in three sections. The first section deals with penal institutions, and is in charge of Dr. Ralph M. Chambers; the second comprising the five state hospitals for mental diseases, the State Colony for Feeble Minded and the State Epileptic Colony is in charge of Dr. George M. Kline. The third section will include 3,000 public school children and the children in four state institutions for dependent and delinquent children. The members of the staff of the third section are being selected and its work will begin when schools open in the fall.

VIRGINIA

Appointments at the University.—Dr. Leroy A. Calkins, assistant professor of obstetrics and gynecology, University of Minnesota Medical School, Minneapolis, has been elected professor of obstetrics and gynecology at the University of Virginia Department of Medicine, and Alfred Chanutin, Ph.D., department of physiology, University of Illinois, has been elected professor of biologic chemistry, and Dr. St. George T. Grinnan, associate professor of pediatrics at the University of Virginia Department of Medicine, Charlottesville, has been appointed professor of pediatrics to succeed the late Dr. McGuire Newton. Lloyd Campbell Bird, assistant director of the state health laboratory, Richmond, has resigned to become associate in bacteriology at the University of Virginia Department of Medicine, Charlottesville.

WISCONSIN

Joint Health Campaign Among Indians.—A joint health campaign among the Indians of Wisconsin has been started by the Federal Bureau of Indian Affairs and the Wisconsin State Board of Health and will continue until September. The campaign, which began at Bayfield several weeks ago, will cover all reservations within the state. The schedule as outlined, subject to change, follows: Ashland, week beginning July 7; Laona, week beginning July 14; Oneida, week beginning July 21; Keshena, two weeks beginning July 28; Wisconsin Rapids, two weeks beginning August 11; Hayward, week or ten days beginning August 25. Lac du Flambeau will also be covered. Trachoma will be "combated" by the medical staff, general health examinations will be made at the reservations, and the Indians will be instructed in sanitation. The Bureau of Indian Affairs is represented in the work by Dr. and Mrs. Len L. Culp, the latter a registered nurse. Both are familiar with the needs and customs of the Indians. The state board of health is providing one physician from the staff of the Bureau of Communicable Diseases, and at present is also aided by Dr. Arthur V. DeNeveu, deputy state health officer for the northern district, and by Miss Martha Riley, a social worker.

PHILIPPINE ISLANDS

Hospital for Malaria Opened.—A hospital designed primarily for the treatment of malaria in the provinces of Pampanga and Bataan was recently opened at Del Carmen, 60 miles north of Manila. It is completely equipped and was the gift of John D. and Adolph B. Spreckels of San Francisco who are interested in the sugar industry at Del Carmen. This hospital will be the headquarters for the Rockefeller Foundation and the Philippine Health Service in their campaign to control malaria.

GENERAL

Sioux Valley Medical Association.—At the annual meeting of this association, July 8, at Sioux Falls, S. D., the following officers were elected for the ensuing year: president, Dr. Charles E. McCauley, Aberdeen, S. D.; vice presidents, Drs. Charles L. Sherman, Luverne, Minn., and Jay M. Crowley, Rock Rapids, Iowa; secretary, Dr. Roy F. Bellaire, Sioux City, Iowa, and treasurer, Dr. Walter R. Brock, Sheldon, Iowa.

Hebrew University School of Medicine.—Dr. Israel S. Wechsler, New York City, secretary of the American Jewish Physicians' Committee for the building of a medical school as part of the Hebrew University in Palestine, leaves for London, August 5, to engage a medical director for the Microbiologic and Chemical Institute in Jerusalem, the first part of the proposed medical school to be inaugurated. Dr. Wechsler will then go to Palestine to supervise the immediate inauguration of this work.

Number of Women Physicians Decreasing.—There are six women physicians in the United States to every 100 men physicians, whereas ten years ago women comprised about 10 per cent. of the medical profession, according to Dr. Kate C. H. Mead, formerly president of the Medical Women's National Association. Dr. Mead, in addressing that association recently in Chicago, ascribed the decrease in women physicians to the increased cost of medical education and to an increase in opportunities in social and laboratory work which attract women who might otherwise study medicine.

International Health Conference in Jamaica.—The United Fruit Company has called an International Conference on Health Problems in Tropical America which will be held in Kingston, Jamaica, July 23-31, in order to obtain assistance in tropical disease problems. The United Fruit Company has about 62,000 employees working in Cuba, Jamaica and Central America. Sixty-nine medical experts from seventeen countries have been invited to the conference. Their visit will be prolonged to August 13 by a tour of the company's plantations and by clinics to be held in the company's nine hospitals.

Resolution of Library Association.—At the twenty-seventh annual meeting of the Medical Library Association, Chicago, June 9-10, the following resolution was unanimously adopted:

WHEREAS, Many of the German publishers of medical books and periodicals are making unreasonable and unjustifiable charges for their publications to foreign subscribers and especially discriminating against American subscribers; therefore, be it

Resolved, That it is the sense of this meeting that the Medical Library Association go on record expressing its disapproval of this unfair discrimination and urging the library and individual members of the Association to discontinue the purchase of German medical books and periodicals until such time as the German publishers adopt a more equitable policy toward the American subscribers regarding prices; and further urging the discontinuance entirely of the purchase of all German books and periodicals unless prompt evidence is given of a change of attitude on the part of the German publishers and agents.

Parts of Europe Free from Smallpox.—The Epidemiological Report of the Health Section of the League of Nations, June 15, states, that Scandinavia and Central Europe, with the exception of Switzerland, are free or practically so, as usual, from smallpox. Only a few cases are reported in Italy, and fewer cases in the kingdom of the Serbs, Croats and Slovenes and Greece are notified than last year. Roumania and Bulgaria are nearly free from smallpox and reports from Russia indicate a much lower prevalence than last year. The Swiss outbreak appears to be declining, but in England the notification of smallpox is increasing again. The incidence of smallpox remains high in the United States, the report adds, and for the four weeks ending May 3, the highest number of cases are, as usual, in California.

Abraham Jacobi Memorial Fund.—The fund committee of the Abraham Jacobi Memorial Fund of the Section of Diseases of Children of the American Medical Association requests that contributions be forwarded promptly so as to learn how many copies of the transactions to publish. In some years late contributors have been unable to secure transactions because the supply was exhausted. The section provides that this memorial fund be expended as follows:

A copy of the yearly transactions of the section is to be sent free to each contributor; to pay part or all of the expenses of a foreign guest of the section; to encourage pediatric exhibits in the Scientific Assembly and if advisable to pay the expense thereof from this fund; when possible to grant funds for the assistance of pediatric research or for charitable gifts of especial appeal to pediatricians, and for expenses connected with the committee's work and unusual expenses incurred in necessary duties of the section secretary.

Contributions should be sent to the secretary of the committee, Dr. Frank C. Neff, 1111 Rialto Building, Kansas City, Mo.

Federal Hospital Census.—A recent announcement of the U. S. Department of Commerce states that on or about Jan. 1, 1923, there were 893,679 persons confined in "federal, state, city, county and private institutions for defectives, dependents, criminals and juvenile delinquents, homes for adults, homes for dependent and neglected children, institutions for juvenile delinquents, penal institutions and almshouses." The report shows a total of 783 institutions for the mentally diseased, feebleminded and epileptics, a total of 4,978 general hospitals, a total of 1,206 special hospitals, and a total of 289 federal hospitals in this country. There are, it states further, 2,519 general dispensaries, 1,031 special dispensaries, 423 federal dispensaries and 87 industrial dispensaries. The report shows also that during 1922 there were 4,973,032 patients treated in hospitals and 21,621,761 visits of patients for treatment in general and special dispensaries. The report contains data on various other kinds of institutions which care for the sick and unfortunate.

New Magnetic Observatory to Replace Greenwich.—A new magnetic observatory to replace Greenwich is under construction at Abinger in the uplands of Surrey, England, on a ten-acre site, twenty miles from London, according to the *Journal of Terrestial Magnetism*. The electrification of the Southeastern and Catham Railway, which is within a half mile of the old observatory, according to *Science*, made it necessary to discontinue the work at Greenwich. The new station is in longitude 0° 23′ 12″ west and latitude 51° 11′ 03″ at an elevation of about 800 feet and 2¾ miles from the railway. It is being financed by the Southeastern and Catham Railway and the buildings include variation observatory, absolute observatory, residence, offices and dynamo and accumulator rooms and caretaker's quarters. Absolute observations at Abinger were begun last March simultaneously with those at Greenwich, and will be continued until the electrification of the railway makes it impossible to observe at Greenwich, which may be until the end of next year.

American Chemical Society's Essay Contest.—Secretary of Commerce Herbert Hoover, chairman of the National Awards Committee of the American Chemical Society, has announced that six four-year scholarships to Yale University, consisting of tuition fees and $500 a year in cash, have been awarded in the prize essay contest of the American Chemical Society to the following:

Donald L. Vivian, Phoenix Union High School, Phoenix, Ariz.
James Cole Reid, Bryan Street High School, Dallas, Tex.
Oliver Chandler Pittman, Commerce High School, Commerce, Ga.
Elton R. Allison, Centralia High School, Centralia, Wash.
Benjamin Nassau, Hartford Public High School, Hartford, Conn.
Eugene Russell Brownscombe, Santa Rosa High School, Santa Rosa, Calif.

The contest was conducted in the high schools and secondary schools of the United States and more than 500,000 students competed. Six prizes ($20 each) were awarded in each state and the District of Columbia, and it was from among the state winners that the national winners were selected by this committee. The funds for these awards were donated by Mr. and Mrs. Francis P. Garvan, in memory of their daughter. The contest will be continued next year.

A Study of Foster Children.—The State Charities Aid Association of New York has completed a three year study of 910 children who have been placed in homes by that association in the twenty-five years of its existence and who are now 18 years or more of age. The study was made possible by a grant from the Laura Spelman Rockefeller Memorial Fund and is said to be the first of its kind made on such a large scale in this country. It shows that 615, or 77 per cent., of these children are now capable of self-support and are living in accordance with the moral standards of the community, that is "they turned out to be decent, law abiding citizens, respected in their communities." The other 23 per cent. range from those who are harmless to those who are actively harmful and incapable of meeting the ordinary demands of personal and community obligations. There were 315 children of the 910 who were less than 5 years of age when they were placed. Of those who turned out to be capable, 86 per cent. were less than 5 years old when placed; 7.6 per cent. of the children placed when over 5 years of age were anti-social, while only 2.6 per cent. of the children who were less than 5 when placed were anti-social. The homes in which these children were placed were carefully selected by the association, and the majority belonged to people of the "average middle group," with moderate income; about 15 per cent. of the homes were above the average, and about 12 per cent. were distinctly mediocre; 35 per cent. of the children studied whose present situation is known are still in their foster homes; 31 per cent. are married and have their own homes, and 24 per cent. are working away from home.

LATIN AMERICA

Sanitary Campaign in Paraguay.—The campaign against hookworm which the Rockefeller Foundation started early this year in Paraguay is in charge of Dr. Fred L. Soper who is assisted by a staff of fourteen inspectors and an expert analyst. According to the *Bulletin of the Pan-American Union* (July, 1924) the campaign comprised in March visits to 437 houses, a hookworm census of 4,275 persons of whom 1,420 were found to have intestinal parasites, 1,640 microscopic examinations, the treatment of 2,418 persons, and the discharge of 724 persons as cured.

Free Maternity Service in Buenos Aires.—An ordinance has been passed by the city of Buenos Aires the object of which is to provide free maternity service in the home. This service is carried on by maternity hospitals, visiting midwives, and a

staff of obstetricians. The maternity hospitals conduct clinics for the examination and treatment of pregnant women, and take care of those patients whose condition does not permit service in the home. The city is zoned for the administration of this work, and the maternity hospitals and district offices direct the work of the physicians and midwives. The staff of physicians are specialists who receive a monthly salary. The sanitary bureau provides free medicine and material for the confinements taken care of in the home.

FOREIGN

Oto-Laryngologist Elected President of Royal Society.—Sir St. Clair Thomson, who was recently elected president of the Royal Society of Medicine of London, is the first oto-laryngologist to be elected to that position since the society was founded in 1805. All previous presidents have been alternately physicians or surgeons. Sir St. Clair Thomson begins his duties in October and holds office two years. He is an honorary fellow of the American Medical Association and of the American Laryngological Association.

Centenary of the Medical and Surgical Society of Bologna.—On May 23-25, the Medical and Surgical Society of Bologna, one of the famous scientific academies of Italy, celebrated the first centenary of its foundation. The society was founded by Giacomo Tommasini, a professor of clinical medicine in the University of Bologna. At first the members met to read together important works which were then summarized and published in pamphlets called *Opuscoli*. These were followed by the *Memorie*, noted for the works of Alfonso Corradi. In 1828, however, the society published its official periodical the *Bollettino delle Scienze Mediche*, which during its long existence has received a great part of the scientific productions of the Medical School of Bologna and other Italian schools. The publication of the *Bollettino* enabled the society to receive in exchange papers and pamphlets from national and foreign academies, which formed the nucleus of a private reading room, now a library comprising 500 periodicals, 178 of which are foreign. Added to other works, they make a total of 10,000 volumes, besides 15,000 opuscules. The work of this society in the interest of hygiene and public health is notable. It initiated free vaccination against smallpox. It has founded marine hospitals for scrofulous children, homes for needy physicians, and given medical care and treatment to the poor. The most celebrated professors of the Athenaeum of Bologna, from Tommasini to Mondini, Panizza, Bufalini, Rizzoli, Taruffi, Ercolani, Loreta, and in later years Murri, Albertoni, Ruggi, Majocchi, Codivilla, Novi, Giacomini, Putti and finally Dagnini have been its presidents. On the occasion of the society's first centenary, two scientific meetings were held in the society's headquarters in the Archiginnasio. During these meetings thirty-two communications on various phases of medicine and surgery were presented. The secretary, Prof. Giovanni Cavina, read many complimentary letters from national and foreign academies in honor of the anniversary; Prof. Giuseppe Dagnini gave the opening address; then followed discourses by officials and delegates. Prof. Domenico Majocchi, professor of skin and venereal diseases in the Athenaeum of Bologna, gave the "official" address. Each member was presented with a medal coined for the occasion, with a volume of the history of the society containing more than a thousand pages written by Prof. Lino Sighinolfi, and also with a series of noteworthy scientific monographs. A number of foreign members were elected, and among these were Harvey Cushing, Boston; John C. Hemmeter, Baltimore, and William J. Mayo, Rochester, Minn.

Deaths in Other Countries

Dr. **Bruce Ferguson,** author of "Aids to the Mathematics of Hygiene" and many papers on ophthalmologic subjects, at Surbiton, England, June 10, aged 60.——Sir **Sidney Russell-Wells,** member of parliament for the University of London for many years and heart specialist, died of heart disease suddenly while attending a patient.——Dr. **Jalaguier,** emeritus professor of surgery at Paris.——Dr. **Slowzow** and Dr. **N. P. Krawkow** of the Petrograd Medical Military Academy.——Dr. **David Lobo,** emeritus professor of obstetrics and rector of the Central University of Venezuela, president of the National Academy of Medicine during a recent term.

CORRECTIONS

Berlin Letter.—In THE JOURNAL, July 12, the Berlin Letter, page 136, lines 14 to 16, the words "resection of the first and second ribs" should read "resection of the first to the eleventh ribs, inclusive."

Section on Stomatology.—THE JOURNAL (June 21, p. 2044) stated in the minutes of this section that Dr. William P. Healy, New York, was elected vice chairman, which is an error. Dr. Joseph D. Eby, New York City, was elected vice chairman.

Government Services

Hospitals Authorized

Pursuant to instructions of the Secretary of War the organization of the following hospitals, organized reserves, has been authorized: General Hospital No. 74 (Garfield Memorial Hospital Unit, Washington, D. C.); Surgical Hospital No. 30 (Fort Wayne Lutheran Hospital Unit, Fort Wayne, Ind.), and Surgical Hospital No. 51 (St. Luke's Hospital Unit, St. Louis).

Hospitalized Veterans Subject to Fine for Breach of Conduct

Ex-service men who are receiving treatment in hospitals of the U. S. Veterans' Bureau are hereafter subject to forfeiture of part pay (compensation for disability) for breach of rules or regulations fixed by the director of the Veterans' Bureau. This provision is included in Section 11 of the Reed-Johnson law codifying the federal laws relating to ex-service men and the Veterans' Bureau, passed at the last session of Congress. Discriminating lawyers assert that this section grants court martial powers to officials in charge of Veterans' Bureau hospitals. It is pointed out that the authority to subject patients in veterans' hospitals to forfeit a part of their pay, is a drastic one, and that unless exercised in a careful and judicial way is certain to be the occasion for complaint. The section referred to is as follows:

SEC. 11.—The director is hereby authorized to make such rules and regulations as may be deemed necessary in order to promote good conduct on the part of persons who are receiving care or treatment in hospitals, homes, or institutions as patients or beneficiaries of said bureau during their stay in such hospitals, homes, institutions, or training centers. Penalties for the breach of such rules and regulations may, with the approval of the director, extend to a forfeiture by the offender of such portion of the compensation payable to him, not exceeding three-fourths of the monthly installment per month for three months, for a breach committed while receiving treatment in such hospital, home, institution, or training center as may be prescribed by such rules and regulations.

The Defense Test

The President has designated September 12 as a day to commemorate the achievements of this country in the World War. On that day, the sixth anniversary of the battle of St. Mihiel, there will be a practical demonstration of the progress made in advancing the plans of the National Defense Act. The War Department has progressed to a point in preparation for defense that it desires "to take stock," so as to be able to revise its plans. The defense test will be simply the assembling of the regular army, the national guard, and the organized reserves in their home communities to introduce to the people the new army. The idea is, says the Surgeon General, to suggest to officers their respective duties, to enable them to visualize the problem of defense for themselves, and thus avoid confusion should an emergency occur. Officers, enlisted men and nurses will be impressed with their particular function and place in the great war machine. The defense test will bring before them a working knowledge of their duties in the event of mobilization. The necessity, he adds, for the whole hearted and active interest of reserve officers in this project cannot be overemphasized. Physicians who have not yet enrolled in the reserve corps are earnestly urged to participate in this community patriotic demonstration.

Course for Reserve Medical Officers

The War Department has authorized the surgeon general of the army to organize classes for a six weeks' course of instruction for officers of the branch assignment group of the medical section, officers' reserve corps at Carlisle Barracks, Pa. The course will begin about Sept. 1, 1924. Classes will be limited to twenty officers. Requests for assignment to active duty for the purpose of pursuing this course should be by letter addressed to the surgeon general of the army. Officers selected for the training will receive mileage to and from their homes and pay and allowances of the grade they hold in the reserve corps.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 30, 1924.

Osteopathy in England

Notwithstanding many differences, England shows certain similarities to the United States which are to be found in no other country. This, no doubt, is due to the large part she has played in the racial and, still more, in the cultural origin of the latter. Perhaps the most important characteristic common to the two peoples is the extent to which individuals think for themselves with little regard for authority. Admirable as is this characteristic in many ways, it has its drawbacks. One is a multiplicity of cranks and ridiculous cults. No other countries are so troubled with antivivisectionists and antivaccinators as are the English-speaking ones; but in producing osteopathy and the "electronic reaction" of Abrams the United States has outrun England. However, as might be inferred from the preceding argument, an eccentricity that could grow in the one country could be successfully transplanted to the other. In previous letters the existence among us of followers of Abrams has been described. But even before this, osteopathy had been transplanted to this country. This fact was quite unknown to the medical profession at large until the publication this week of a discussion at the Medico-Legal Society. Yet the "British School of Osteopathy" was "incorporated as an educational institution" in 1917. It has a large staff of lecturers, mainly Americans, who figure in the prospectus as "D.O.," and apparently it is a commercial success. We are told in the prospectus that "it was established with the primary purpose of setting up a scientific institution of authoritative status. . .. . The regular course consists of four years theoretical and practical, and covers work outlined by the Associated Colleges of Osteopathy and required for licensure in the different states of the United States and in the provinces of Canada. As the demand for practitioners is great and few are available, special classes have been started, available only to the graduate practitioner or licentiate in medicine or advanced students in the medical course." The fees for the postgraduate course are $500 a year. There is an imposing program, which appears almost to cover the ordinary medical curriculum. But no mention is made of any attempt to obtain legal recognition, which shows prudence; for although there is in this country full toleration for the teaching and the practice of any doctrines, however ridiculous, and money to be made out of them, the medical register can be entered only through the regular schools, and osteopathy is too ridiculous to stand any chance of recognition either by the government or by the profession.

The discussion at the Medico-Legal Society was opened by the reading of a paper by a physician entitled, "Osteopathy in Its Medico-Legal Aspects." He had studied osteopathy in America, and maintained the usual doctrine that all sorts of ills could be traced to slight luxations of the vertebrae and cured by manipulations, and he narrated cases of his own illustrating this. He pointed out that osteopathy had been established in the Unted States for more than fifty years and was spreading over the whole world. Our laws in no way prohibited unqualified practice in this country, and he thought that osteopathy would in time grow to be almost as important as in the United States. He therefore pleaded that it was time that the whole subject should be taken up and investigated by the medical profession.

In the discussion, the claims made for osteopathy were regarded with incredulity. One speaker had recently rescued three patients with organic nervous disease—disseminated sclerosis, paralysis agitans, and locomotor ataxia—from treatment by osteopaths. In another case, tumor of the thyroid had been treated for six months at fees amounting to $900 by a "doctor of osteopathy," and had then to be treated by a surgeon. The so-called "cures" of osteopathy were suggested to be often a matter of suggestion. It was also pointed out that the colleges of osteopathy qualified every student. In his reply, the reader of the paper admitted that osteopathy had become a business, and that therefore the degree was conferred on unsuitable persons. He also stated that there were three osteopaths in this country who held medical qualifications.

It is to be noted that this paper was not read at one of the ordinary medical societies, where it would have been subject to the criticisms of surgeons and particularly orthopedic surgeons, but at a society devoted to medicolegal questions and consisting partly of physicians and partly of lawyers. Probably none of the other societies would have accepted it. Moreover, under the pretense of discussing the medicolegal aspects of osteopathy, an attempt was made to justify its practice.

Medical Education in London and the Rockefeller Gift

At the assembly of faculties in connection with University College, the dean of the faculty of medical sciences, Prof. A. J. Clark, reported that the past year had been memorable in the history of the faculty, for during its course it had entered the splendid new building provided by the generosity of the Rockefeller Foundation. The new building and extra equipment thus available afforded unique opportunities for the advancement of teaching and research in the medical sciences. Unhappily, the present organization of the medical examinations in the University of London was such as to hamper any attempt to develop the teaching of medical sciences along progressive lines. They were fettered by a rigid system of examinations devised to insure the attainment of the least common standard in a number of different schools. Unfortunately, this system with even greater certainty checked any advance beyond such a minimum standard. A movement within the university for the purpose of bringing the medical examinations more effectually into line with modern teaching was in progress. When this was accomplished, they would feel that the way was open to realize the full aim of the Rockefeller Foundation, and to make the faculty a great center not only for the advancement of medical sciences but also for the advancement of the teaching of the sciences.

A Physician on the Use of Alcohol

In the debate on the liquor (popular control) bill in the House of Lords, Lord Dawson (physician to the London Hospital) said that the consumption of alcohol in this country was far too great and that the nation spent too much on it. But in searching for a cure they should be watchful and see that they did not replace one evil by another. He deprecated the constant quotation of America, and thought that we should find our own remedies for our own ills. This country was becoming temperate, and at an accelerated rate. If the conditions responsible for the improvement were fostered, they could face the solution of this dire problem with greater ease than in the past. The opinion of the medical world, both in this country and abroad, was by a very large majority in favor of alcohol as a useful substance, a beneficent agent when taken in proper quantities, at proper times and by people whom it suited. The majority of the medical profession drank wine, though in strict moderation. It was perfectly true that the action of alcohol was in no way useful to those occupied in physical or mental labor. It was further admitted that, though it was a food, it was an unsuitable and wasteful food for those in ill health. But its action on the nervous system was beneficent and useful when taken in proper quantities at

the proper time. A glass of alcoholic liquor at the end of the day would lighten the mental horizon, brighten the outlook, and enable a man to drop those gray colored spectacles with which he viewed the world after the hardships of the day, and give him content of mind and happiness. They ought to do nothing that would diminish the cheerfulness and the measure of sociability so helpful in helping us along our mortal road. Lord Dawson then gave figures illustrating the decline of the abuse of alcohol, taking first delirium tremens. In one large hospital for the three decades between 1894 and 1923, the number of cases began at 27.8 a year, and went down to 17.6 in 1904-1913, and finally to 10. For the same decades the figures for cirrhosis of the liver were 61.4, 53.2 and 20; for alcoholic neuritis, 23.8, 14.1 and 5. During the same period, the consumption of beer per head of the population was in the first decade 29.52 gallons, in the second 28.9, in the third 26.6, and in the last year only 15.8. Similarly, the consumption of spirits had fallen from 0.87 gallon per head of population to 0.31. He would leave restrictive measures alone and proceed on the line that if the people were given better houses and more recreation grounds, they would themselves do the rest.

PARIS

(From Our Regular Correspondent)

June 20, 1924.

The Ninth Congress of Legal Medicine

The ninth Congress of Legal Medicine of French-speaking countries has just been held in Paris, under the chairmanship of the alienist Dr. C. Vallon of Paris. Among the topics on the program, two are of general interest: (1) The Management of Delinquent Psychopaths, and (2) Tabes and Industrial Accidents.

THE MANAGEMENT OF DELINQUENT PSYCHOPATHS

The chief communication on the management of delinquent psychopaths was presented by Dr. L. Vervaeck, director of the Belgian Service d'anthropologie pénitentiaire, who endeavored to show, through arguments of a social and medical character, that the treatment of criminals adjudged irresponsible by alienists and whose tendencies remain a source of danger to society in general should be carried out within the penitentiary. Vervaeck presented statistics to show the frequency of morbid criminality in both France and Belgium during the last twenty years. However, there is no logical or equitable rule that determines, at present, what methods shall be used for the suppression of crime and misdemeanors committed by persons mentally ill or abnormal; for diverse reasons, some receive severe sentences; some are treated with indulgence; some are placed in hospitals for the insane, after being exonerated of all charges; some are interned, and others are given their liberty. Furthermore, insane criminals, apparently cured, are usually dismissed too soon from the hospital, and statistics show that they escape from a psychopathic hospital more easily than from prison.

Analyzing recent anthropologic statistics of Belgian prisons and comparing them with records in regard to the mental and biologic characteristics of insane criminals, one is struck with the great biologic resemblance between the two groups of delinquents, one of which has received a penitentiary sentence, while the other is confined in an asylum. The group of criminals declared irresponsible by the courts is not composed exclusively of the insane, in the medical sense of the word. The major part of them are constitutional psychopaths, who present dangerous antisocial tendencies and reactions of a demential character, which may be only temporary. On the other hand, among delinquents who have been sentenced, one finds a number actually insane, in whom the mental affection failed to be recognized during the course of the trial or did not reveal itself until after they were committed to prison. In fact, one observes among delinquents who have received lighter sentences a large number of the same psychopaths and constitutional perverts that one finds in the quarters of the asylum reserved for irresponsible criminals.

Vervaeck believes that the commitment of drug addicts, the mentally ill and the abnormally minded to psychiatric annexes to large prisons would be advantageous not only from the administrative and social, but also from the therapeutic, standpoint. Only the truly insane should be sent to the psychopathic hospital. By keeping within the limits of the penitentiary all abnormal criminals, drug addicts and the mentally unsound, who are dangerous for themselves or their environment, a more energetic, more efficacious, more scientific and more humane protection of society would be attained.

Vervaeck's ideas seemed too advanced for his French colleagues. Prof. Henri Claude of Paris admitted that reforms were needed in the French penitentiary system, in which the psychiatrist and the anthropologist exert no determining influence, but he was inclined to make reservations. He stated that, in addition to the truly insane, there is a large number of constitutional psychopaths who are enemies of society: antisocial beings, morons, mental weaklings and those whose mentality is more or less out of balance; these make up the habitual recidivists. They may or may not derive benefit from the plea of reduced responsibility; they slip through the courts and are not sent to an asylum. What should be done about them? Should they be subjected to psychiatric treatment for an unlimited time? What results will be obtained and what methods will be employed? It should not be forgotten that it is these subjects who seem to be benefited by discipline of the penitentiary but who become recidivists as soon as they are given their liberty. Claude holds that if we are to begin in France the work of reform that is necessary, the place to start is with the early detection of these mental anomalies. A medicopsychiatric record card for every child would be an interesting innovation and easy to carry out. But in order that a medical investigation may be carried out under scientific conditions, it would be necessary to establish in every prison a special department for medicopsychopathic observation, provided with alienists and specially trained nurses.

Dr. Donnedieu of Paris stated that he regards intimidation as indispensable for the protection of society. Collective prevention would be weakened if the delinquent were allowed to believe that a penitentiary sentence would be equivalent to hospitalization. Dr. Vervaeck replied that the indeterminate character of the duration of internment constitutes in itself a sufficient element of intimidation.

Dr. Henri Collin of Paris prefers a penitentiary annex to the psychopathic hospital to the psychiatric annex to the prison. He appreciated the work that had been done in Belgium, but he did not think it would be well to organize a similar service in France. He approved the idea of establishing an observation department in large penitentiaries, in charge of a physician trained in psychiatry. Irrespective of what form of service is adopted, the three essential features of detention, following the medical examination, should be: treatment, discipline and work. Dr. Toulouse of Paris approved of what is being done in Belgium, but he drew the attention of the congress to the importance of the early detection of abnormal persons. The antisocial tendencies should be discovered before the crime or misdemeanor is committed. When the detention period begins, the psychic reactions of the former delinquent should be observed with a view to protecting society against recidivation.

TABES IN RELATION TO INDUSTRIAL ACCIDENTS

Professors Verger and Lande of Bordeaux pointed out in their communication that, while it is true that traumatism

cannot produce tabes in a syphilitic, it may modify the evolution of the disease and cause symptoms to appear which probably would not have appeared otherwise: spontaneous fractures, tabetic arthropathies and ataxic incoordination. In most cases, an accident leads to the revelation of a latent tabetic state of the existence of which the subject is ignorant, but which the accident reveals and aggravates. The question arises, from the medicolegal point of view, as to what the previous condition of the subject was. This should be considered from two aspects: a demonstration of the tabetic state and the medicolegal evaluation of that state. The evaluation should take into account the direct and indirect consequences of the accident, but not the disease in itself. If it was an ordinary accident due to a definite cause, and sufficient in itself to produce the claimed effects, affecting a person who is known to have had tabes previously, the responsibility of the accident for new symptoms of tabes should be admitted; but limited by considerations of site of the lesions, the time the accident occurred and general relationships. In case of the discovery of tabes soon after an accident but not necessarily the result of it, either the lesion resulting from the accident will develop normally and tabes will not enter into the account, or the lesion will be influenced by the tabes; in the latter case the basis for determining the damage should be all the consequences of the accident without attempting to distinguish between those which result normally and those which result through the concomitant influence of the disease.

If, after the case has been settled, an exacerbation arises before expiration of the time for revision, the medical expert must distinguish between conditions that may possibly arise: (1) aggravation caused by complications within the area affected by the primary accident and due to the evolution of the lesion caused by that accident; (2) aggravation caused by the original symptoms, for example, by immobilization in bed or from the radical change of life resulting from the accident, in which cases it would be very difficult not to admit a relation of cause and effect between the traumatism and the resulting complications, irrespective as to whether or not the influence of the tabetic state may have been preponderant; (3) finally, an aggravation with new symptoms which it would be impossible to connect, either directly or indirectly, with the accident but habitual in the evolution of tabes and therefore not justifying a revision of the case.

In the discussion, Dr. André Léri of Paris emphasized the value of collecting literature on the subject and studying the influence on organic diseases of the nervous system of intoxications and infections, some of which may be considered as industrial accidents in the same category as traumatism. Dr. Crouzon of Paris distinguished between the cases of fractures or arthropathies produced by the tabetic state, and in which the traumatism must be proved, and the cases of fractures or arthropathies occasioned by a violent traumatism and aggravated by tabes. Again, a traumatism incapacitating a tabetic for some time may cause incoordination. In other words, the remote consequences of tabes must be taken into account; one should mention in detail in the report the symptoms found, and make reservations with regard to the later appearance of symptoms that may result from the evolution of the disease. Dr. Desclaux of Nantes pointed out that one should not overlook the fact that indemnification applies to the accident in the medicolegal sense of the word; the tabetic must have suffered the accident on the occasion of performing the industrial work. Desclaux reported a case of spontaneous fracture resulting from syphilitic osteitis in incipient tabes. The workman did not receive compensation, for it was mere chance that the fracture developed while he was at work, and would have been produced under the same conditions outside the workshop. The cause, therefore, was not of an industrial nature, and the workmen's compensation law did not apply.

BUENOS AIRES

(From Our Regular Correspondent)

June 1, 1924.

Subtropical Diseases

The commission appointed by the national department of public health, and headed by Professor Muehlens, has completed its survey. With the cooperation of the public health personnel and the Institute of Bacteriology, directed by Dr. Sordelli, the commission conducted intensive investigations in the malarial regions at Tucuman, Salta y Jujuy. Several areas of severe malaria, even an 80 per cent. incidence of the tropical type, were found at Monteros, Rosario de la Frontera to Antillas, La Mendieta and Ledesma. In some areas trachoma was very prevalent. The skin type of leishmaniasis is very uncommon, and the few cases found have been imported from Bolivia or Chaco. The most sensational finding was a trypanosome, probably Chagas variety, in a 5 year old child in a nongoitrous region at Monteros (Tucuman), and many triatomas.

Surgery of Angina Pectoris

At the recent meeting of the Society of Internal Medicine, Dr. J. Diez reported three cases of angina pectoris in which he had performed successfully Jonnesco's operation. In all three the pain and attacks have subsided, but in one case, left pectoral neuralgia appeared after the operation.

Malaria Courses

All the members of the commission appointed by the national department of public health have left for Italy, to attend the courses on malariology to be given at Rome by a selected group of Italian professors. The members of the commission are the regional and division chiefs of the malaria campaign, Drs. A. Barbieri, C. Arias Aranda, L. Gutierrez, J. M. Zambrano, I. Castillo Odena, R. L. Elli, R. A. Lopez, E. Forte, bacteriologists R. Biglieri, R. Dios, A. Pozzo and M. Cossio, and engineers E. G. Goligorsky and J. G. Dietsch.

Filariasis

Dr. Biglieri has made a filaria census in the regions where the Tucuman microfilaria prevails. At Calera there was a 25 per cent. incidence of infected persons and at Arcadia 16 per cent. This is more or less the same degree of infection found by Padilla in 1915. No elephantiasis was noted, nor any other symptom attributed to the presence of the parasite.

Goiter Prevention

The national department of public health has organized an extensive plan for the prevention of endemic goiter, adopting the methods applied successfully in the United States by Marine and his associates, and in Switzerland by different physicians and canton authorities. Dr. J. T. Lewis has left for Salta to organize the preventive campaign at Cerrillos and Rosario, taking as a guide the result of medical examinations in schools.

Rawson Memorial

The commission charged with the duty of suggesting a memorial to Dr. Guillermo Rawson, the Argentinian sanitary leader, has asked the government to appropriate 50,000 pesos (about $15,000) for a statue. A public subscription has also been opened.

Personal

Prof. Mariano R. Castex has been appointed foreign member of the medical academies of Rome, Paris and Madrid.—— Prof. H. Roger, dean of the Paris Medical School, has published in a book his impressions of his recent trip to South America. While praising the rapid progress and efficient organization observed, he points out that systematic and original research is still very rare.——Dr. O. M. Pico has

been appointed professor of physiology in the Rosario Medical School, and director of the Institute of physiology.—— Prof. Daniel Cranwell has left for the United States.——Dr. Nerio Rojas has been appointed professor of legal medicine in the Buenos Aires Medical School.

BELGIUM

(From Our Regular Correspondent)

June 1, 1924.

Carbon Monoxid and Automobiles

Following an accidental death from carbon monoxid poisoning, which took place under very peculiar conditions, M. Ranwez has presented to the Royal Academy of Medicine a comprehensive study on the intoxications resulting from automobile motors. The special circumstances of the accident deserve to be noted, for the asphyxiation occurred in the open country. The car was an autotruck with a Ford motor. The body was a wooden, boxlike arrangement opening at the back and equipped with double doors. In front was a closed wicket with a small, sliding door on a runway. Twenty persons were seated in the truck on benches placed crosswise of the vehicle.

About twenty minutes after the car started, one of the passengers knocked on the wicket-door and complained of the heat, adding that one of his friends was feeling sick. Investigation revealed the startling fact that twelve men were unconscious, having either crumpled up on the floor of the truck or having remained propped up against the others on the benches or against the sides of the vehicle. The chauffeur, the conductor and the well passengers hurriedly carried the twelve sufferers out, laid them by the side of the road, and endeavored to revive them. At the end of about ten minutes, eleven of the men had recovered consciousness, but a youth, aged 17, could not be resuscitated, and succumbed. Analysis of the blood showed that he had died from carbon monoxid poisoning.

After a study of the exhaust gases and of the ventilation of automobile bodies, M. Ranwez concluded that the attention of the public should be called to the danger of allowing a motor to run for any great length of time in a closed space, such as a garage. He calls the attention of also the builders to certain defective details in the motor and the body. The supply of air and fuel in the cylinders should be regulated in such a manner that it would be impossible—at least, in ordinary running—for excessive quantities of fuel or an insufficient amount of air to be admitted. The exhaust gases ought always to be thrown off from the rear of the car, and if it has a closed body this should be carefully inspected to see that there is no point at which exhaust gases can penetrate.

The International Congress of Hydrology and Medical Climatology

The committee of the Belgian Society of Hydrology, in accord with the permanent committee of the Congress of Hydrology, has settled on the date of the next congress. It will be held at Brussels, under the chairmanship of Dr. Modeste Terwagne, Oct. 15-17, 1925.

Abstracts on Legal Medicine

Before the war, Dr. Corin, professor of legal medicine at the University of Liége, in founding the *Archives internationales de médecine légale,* had planned to publish a supplement which should contain, in convenient form for filing, short abstracts of medicolegal articles. As each sheet of the supplement was to have contained but one abstract, it would be easy for subscribers to the *Archives* to file away the abstracts in alphabetical order, according to subjects, which in course of time would constitute a valuable reference work in the field of legal medicine. Since the death of Dr. Corin, nothing had been done to carry out his project; but now Dr. De Laet has brought the plan to a realization in the form of a supplement to the *Revue de droit pénal et archives de médecine légale,* which is entitled, *Fiches de médecine légale.*

Hematemesis Without Lesions

When the Société de gastro-entérologie of Paris chose as a topic for discussion the difficult problem of hematemesis without lesions, the Cercle médical of Antwerp, almost simultaneously, had invited M. Monod to come and give an exposition of this curious syndrome. In his address, Monod, after pointing out the obscurity of the etiology (chlorosis, hysteria, emotional disturbances, probable involvement of the nervous system, and particularly of the visceral nerves supplied to the mucous membranes, having their center in the tractus intermedio-lateralis), took up the consideration of Glénard's theory of hepatic insufficiency, which exerts such a disturbing influence on the blood-vascular system. Certain hemorrhages of the skin and the nasal mucous membrane; also of the gastric mucosa, are comparable to hemorrhages from cirrhosis. Intervention is not advisable in these cases. The main reliance should be placed on absolute rest of the organ, with or without the aid of morphin or antihemorrhagic serum.

Association of the Belgian Medical Press

An association of the Belgian medical press has been established at Brussels. A large majority of the medical journals of the country were represented at the first assembly, which was held at the quarters of the University Foundation. The charter members of the society are: Drs. Bayet (*Le Cancer*), De Mees (*Le journal médical de Louvain*), De Nobele (*Journal de radiologie*), Delchef, representing Dr. Dejace (*Le Scalpel*), Mayer (*Bruxelles médical*), Brouha (*Liége médical*), Voncken (*Les archives médicales belges*), Oury (*Revue de stomatologie*), Rosenthal (*Le journal dentaire*), Moreau (*Les archives franco-belges de chirurgie*), Dekeyser (*Bulletin de la société de dermato-syphiligraphie*), Broden (*Annales de la société de médecine tropicale*), Olbrechts (*La revue de la tuberculose*), Delchef (*Le journal de chirurgie*), and Housiaux (*La revue de la Croix-Rouge*).

The association comprises: corporate members, each of whom represents one of the associated journals; honorary members, who are not entitled to vote, and national and foreign corresponding members, who must be physicians regularly engaged on the editorial staff of a medical journal appearing periodically and not gratuitous. Dr. Dejace, chief editor of *Le Scalpel,* was elected president for the year 1924-1925.

The Medical Society of Antwerp

The Société de médecine of Antwerp has entered on its ninetieth year. It was founded in 1834, soon after the declaration of our independence. It is planning to celebrate its ninetieth anniversary by holding a special assembly at which will be presented a number of papers which will be published in an ornate memorial volume.

Art Exhibit Restricted to the Work of Physicians

In connection with the medical convention to be held in Brussels, June 29 to July 2, the committee on organization plans to hold an exhibit of works of art executed by physicians, which will include paintings, sculpture, musical compositions, literary works, cartoons and photographs.

The Physicians and the Health Insurance Societies

Following a rather lively discussion that took place in the house of representatives over the subject of the recent clashes between the physicians and the mutual aid or health insurance societies, to which reference has previously been made, M. Tschoffen, the minister of labor, suggested that a committee be appointed charged with the duty of finding some

basis of understanding. In this connection, he called attention to the fact that there was in Belgium a total of 1,850,000 persons insured in the mutual societies, which was a large number for a country with a population of only 7,000,000. He emphasized that in 1922 the central government granted large subsidies to these societies, amounting to 35,000,000 francs.

PRAGUE

(From Our Regular Correspondent)

June 28, 1924.

Society for Child Study

The Society for the Study of the Child, founded in Brno two years ago, held its second congress in that city, June 6-9. The congress was well attended, with about 200 members and representatives of the ministries of health, education, social welfare, different associations for child welfare, and societies of teachers and professors. It was opened by Prof. E. Babak, who is its founder, and professor of physiology at the Brno Medical Faculty. He spoke on "Physiology in Relation to the Study of the Child." The rest of the lectures, which were presented partly by teachers and professors and partly by physicians, dealt with such topics as methods of the psychologic study of the child; fatigue of the school child, and influence of the war on the morals of the child. The interest of the congress was especially centered on the symposium on sex education of children, which was opened by Dr. O. Teyschl, professor of pediatrics, and Dr. A. Tryb, professor of venerology, both of the medical school in Brno. The Society for the Study of the Child maintains a clinic in Brno where the principles arrived at are communicated to the parents and teachers who come to the clinic to discuss their problems with the experts who give their services to the clinic.

The Smoke Nuisance

An investigation of the smoke nuisance was recently made in Prague, because it has been long felt that the famous beauty of the city suffers a great deal from fogs and the lack of sunshine. It was figured out that approximately two million tons of coal is used in the city of Prague each year, out of which one million is consumed in households and the rest in different industrial establishments. This gives rise to 75 million square meters of smoke daily, which contains 70 tons of solid material. The smoke contains a considerable proportion of vapor, the daily amount of which is figured out as being from 2,500 to 3,500 tons a day. This, of course, increases considerably the naturally high humidity of the atmosphere of Prague, which is situated in a rather narrow valley, with considerable evaporation from its river Vltava. The fogs and cloudiness resulting from this condition have also a deleterious effect on the health of the inhabitants. In order to remedy this condition, a bureau for the inspection of the smoke nuisance has been established by the municipality, the task of which will be to modify the prevailing practice in industries as well as in households in such a way that production of smoke will be avoided as much as possible. The chief difficulty is, of course, the fact that the coal is largely bituminous, with which the production of smoke can be avoided only by a very careful handling of furnaces and stoves.

Association of Medical Students

The Association of Medical Students in Brno has established a fund to Prof. Charles Chodounsky for the support of scientific studies by medical students. Professor Chodounsky, who celebrated recently his eightieth birthday, is considered one of the pioneers of Czech scientific medicine and a great friend of the young medical generation. The fund is to be administered by the faculty of the Brno Medical School, and honorariums will be given at each anniversary of Professor Chodounsky's birthday to five medical students who shall present papers on original research in some branch of medicine. Recently the honorariums have been awarded for the first time, for papers dealing mostly with topics from theoretical branches of medicine.

BERLIN

(From Our Regular Correspondent)

June 21, 1924.

The Effect of War Losses on the Mortality of the Various Age Groups

Corresponding to the extent of their active participation in the war, an increase may be noted in the mortality of males in the various quinquennial age groups during the period of military service. Therefore, according to a recent publication by Dr. Roesle, the age group 20-25 presents throughout the war the highest mortality. Whereas the mortality of that age group in 1913 was only 4.4 per thousand males of the same age, it rose in 1915 to 66.9, which is the maximal figure for that period of life. During the two following years, that enormously high rate was diminished, but rose again to 58.8 in 1918, the year of the influenza epidemic. Also during the first few years after the war, the mortality remained far above the normal rate (that of 1913, for example), since that age group took the most active part in the political disturbances that followed the revolution. Among females of the 20-25 age group, the increase in mortality did not begin until 1917, when the scarcity of food, clothing, coal and other supplies was approaching the climax. The fall in the mortality rate in the years following the war was brought about very slowly, since the later influenza epidemics of 1919 and 1920, together with the marked increase of puerperal fever (following miscarriages), served as a check. The 25-30 age group shows much smaller war losses than the 20-25 group, for the maximal mortality, that of 1915, was only 45.7 per thousand living of the same age. Also during the years immediately following the war, the mortality of males of the 25-30 age group was lower than in the next younger group. The 25-30 age group was the hardest hit by the influenza epidemic of 1918, as was also true in other countries, and with a mortality rate of 12.7 for 1918 it presents the highest mortality for that year of all the age groups here considered. An approach to the prewar mortality rate for the 25-30 age group was not recorded until 1921, for the same reasons that affected the 20-25 age group. The changing mortality rate of the 30-35 age group presents much the same picture as that of the 25-30 age group, but with this difference that the mortality of males in 1915 was no higher than in 1918. After the war, the decrease in the mortality of males was so marked that in 1921 the prewar rate was again reached. The mortality rate for males of the 30-35 age group had in that year dropped below that of females, as is usually the case in normal times. In the 35-40 age group, the course of mortality in males, during the war years, begins to change markedly. The war losses now begin to fall into the background, so that the highest mortality for this group, 25.0, was not reached until 1918; in 1913, the mortality for this group was 6.4. After the war, a noteworthy change began to manifest itself, for in this group, also, the mortality in males dropped below that of females, owing to the greater decrease in tuberculosis mortality among men. The mortality of females, which during the war years increased but slightly, reached in 1921 the level of 1913. In the 40-45 age group, the mortality in males did not rise abruptly until 1917, and did not increase much in 1918. Thus the course of the mortality in males is more nearly equal to that in females.

Insurance Provisions for Physicians

The committee of the Prussian *Aerztekammern* (chambers of physicians, so called) has preferred a request to the com-

petent ministry of public welfare that a law be drafted giving the Prussian *Aerztekammern* authority to establish an insurance fund for the medical profession, whereby physicians may be insured against accident, disease, disability and death. It is planned to make the taking out of insurance compulsory for all voting medical members of a chamber. The cost of this insurance will vary according to the income of the applicant. The *Aerztekammern* shall have the right, at the beginning of each year, to determine the premium rates for insurance, but with the restriction that the premium rates demanded of physicians shall not exceed 6 per cent. of the taxable value of their total income. As one of the reasons for preferring the request, it is stated in the petition that the needs of physicians, which, in recent years, have been greatly accentuated by the bad economic conditions, can no longer be adequately met through the instrumentality of the existing welfare organizations. The urgent warnings that physicians should, of their own volition, through insurance, make adequate provision against the vicissitudes of life have not met with a very hearty response. Consequently, the committee of the Prussian *Aerztekammern* regards compulsory insurance as the sole solution of the problem. The committee calls attention to the fact that Bavaria has already passed legislation providing for the establishment of such an insurance fund.

A Demonstration in Social Hygiene

An exhibit has been opened in the auditorium of the Charlottenburg town hall for the purpose of demonstrating in an interesting manner the work of the various sociohygienic and welfare societies. By means of numerous statistical tables, photographs, drawings and models, the exhibit sets forth in a comprehensive manner the effects of alcoholism and venereal diseases and the constructive work that is being done by the organizations that look after the welfare of infants, young children, cripples and victims of tuberculosis. The exhibit is especially rich in demonstrative material illustrating the activities of the infant and the young children welfare societies. In eight subdivisions of the latter group, which present statistics on pregnancy and childbirth; development of the infant, infant care, the value of mother's milk, artificial feeding, diseases of children, and welfare work among mothers and infants, placards, photographs and models are employed to show what the infant and the young child are in need of and what must be done to promote their development, in order that they may become strong and healthy members of society.

Marriages

HENRY CAMPBELL DIXON, Danielson, Conn., to Miss Ruth H. W. Brooks of Westwood, Mass., June 14.

GEORGE FREDERICK MOENCH, Winnebago, Minn., to Miss True E. Wetherell of Kenton, Ohio, June 7.

JOSEPH GOLDBERG, Brooklyn, to Miss Ada H. Epstein of Midway, Ky., at Cincinnati, May 21.

ARTHUR JAY CASSELMAN, Camden, N. J., to Miss Zula Mae Boyd of Rochester, Minn., July 21.

ROGER WOLCUTT HUBBARD, Kankakee, Ill., to Miss Rhada Belle Smith of Chicago, recently.

ROY G. GRINKER, Chicago, to Miss Mildred Lucile Barman of London, England, July 24.

BERNARD J. KLEIN, Springfield, Mass., to Miss May Gluckman of Brockton, June 15.

CHARLES WEISS, New York, to Miss Sarah Socolobe of Brooklyn, June 22.

ALEXANDER A. BIENIEWSKI to Miss Irene Slavenski, both of Chicago, recently.

EDWIN A. WEGNER to Miss Edythe Kerr, both of Chicago, June 10.

Deaths

Andrew Rose Robinson ✠ New York; Bellevue Hospital Medical College, New York, 1868; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1869; L.R.C.S. and L.R.C.P., Edinburgh, Scotland, 1870; professor of dermatology and on the staff of the New York Policlinic Medical School and Hospital; member of the New York Pathological Society; aged 78; died, July 8, at his summer home in Caledonia, Ont., Canada.

Jack Killem, Binghamton, N. Y.; University of Virginia Department of Medicine, Charlottesville, 1886; Bellevue Hospital Medical College, New York, 1887; member of the Medical Society of the State of New York; aged 58; died, July 11, of a self-inflicted bullet wound, while suffering from ill health.

Cicero Mead Hobby, Iowa City, Iowa; Bellevue Hospital Medical College, New York, 1870; formerly lecturer on ophthalmology and otology at the State University of Iowa College of Medicine, Iowa City; aged 75; died, July 6, at San Diego, Calif., following a long illness.

Daniel T. Millspaugh ✠ Paterson, N. J.; Medical Department of the University of the City of New York, 1884; member of the American Psychiatric Association; proprietor and medical director of the Riverlawn Sanatorium; aged 68; died, June 27, at Princess Anne, Md.

Frederick Lawrence Siler, Franklin, N. C.; University of Nashville (Tenn.) Medical Department, 1897; member of the Medical Society of the State of North Carolina; aged 53; died, June 7, at a hospital in Atlanta, Ga., following an appendectomy.

David M. Provan, Chicago; University of Illinois College of Medicine, Chicago, 1892; member of the Illinois State Medical Society; aged 62; died, July 11, at the Norwegian-American Hospital, of diabetes mellitus and ulcer of the stomach.

Newton C. Ellis, Friendsville, Tenn.; Tennessee Medical College, Knoxville, 1891; member of the Tennessee State Medical Association; aged 56; died, June 25, at the Knoxville (Tenn.) General Hospital, following an appendectomy.

Jasper Duncan Cochrane ✠ Saco, Maine; Medical Department of Columbia College, New York, 1886; past president of the York County Medical Society; at one time member of the city board of health; aged 72; died, July 5.

Louis C. DeWoody, Hot Springs National Park, Ark.; Memphis (Tenn.) Hospital Medical College, 1902; member of the Arkansas Medical Society; aged 56; died, June 30, at St. Joseph's Infirmary, following an operation.

Elgin Roscoe McCreary ✠ Watertown, N. Y.; University of Buffalo Department of Medicine, 1891; past president of the Medical Society of the State of New York; aged 57; died, July 2, of chronic nephritis and endocarditis.

William H. Grayson, Granite City, Ill.; St. Louis College of Physicians and Surgeons, St. Louis, 1883; member of the Illinois State Medical Society; aged 78; died, July 1, at Excelsior Springs, Mo., of uremia.

George Musson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1895; served with the Canadian Army Medical Corps during the World War; aged 51; died suddenly, May 22.

Henry Edwin Douglas, Blackduck, Minn.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1892; member of the Minnesota State Medical Association; aged 56; died in June.

James White Cummings, Abingdon, Va.; Medical Department of the University of the City of New York, 1879; member of the Medical Society of Virginia; aged 66; died, July 9.

Richard John Dowdall ✠ San Francisco; Cooper Medical College, San Francisco, 1901; aged 50; died, July 9, at the Southern Pacific Hospital, of chronic interstitial nephritis.

Alvah S. Hudson, Westpoint, Va.; Medical College of Virginia, Richmond, 1906; member of the Medical Society of Virginia; city health officer; aged 44; died suddenly, June 29.

John Clarence Lindsay, Fairbury, Ill.; Medical Department of Columbia College, New York, 1890; aged 60; died, July 10, at St. Luke's Hospital, Chicago, of ruptured aortic aneurysm.

Joseph Powell Tenney ✠ Reserve, La.; Medical Department of the Tulane University of Louisiana, New Orleans, 1911; aged 37; died, June 13, at a sanatorium in Memphis, Tenn.

Edwin Joseph Boyes ✠ Oakland, Calif.; Trinity Medical College, Toronto, Ont., Canada, 1890; Victoria University Medical Department, Toronto, 1890; aged 58; died, July 3.

Frederick William Kerchner, Glen Carbon, Ill.; Marion-Sims College of Medicine, St. Louis, 1898; member of the Illinois State Medical Society; aged 53; died, July 2.

William C. Stephens, Whitley City, Ky.; Chattanooga (Tenn.) Medical College, 1894; member of the Kentucky State Medical Association; aged 70; died, June 18.

William Lytle Lindbery, Princeton, Ill.; University of Illinois College of Medicine, Chicago, 1883; aged 65; died, June 28, of chronic nephritis and myocarditis.

David B. Traver, Steelton, Pa.; Jefferson Medical College of Philadelphia, 1869; member of the Medical Society of the State of Pennsylvania; aged 83; died, June 16.

Frederick William Ross ✠ San Francisco; Cooper Medical College, San Francisco, 1896; aged 51; died, July 2, at St. Francis Hospital, of carcinoma of the rectum.

Samuel Pusey Nickle, Clifton Heights, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1887; aged 58; died suddenly, July 8, of heart disease.

Bruno Hood ✠ Newton, N. J.; Medical Department of Columbia College, New York, 1885; formerly member of the board of education; aged 64; died, July 8.

Homer Garton Collins ✠ Topeka, Kan.; Medical College of Virginia, Richmond, 1917; aged 32; died, July 5, of injuries received in an automobile accident.

John Joseph Gee, Toronto, Ont., Canada; Trinity Medical College, Toronto, 1890; died, recently, at the Toronto Western Hospital, following an operation.

Thomas J. Call, North Wilkesboro, N. C. (licensed, North Carolina, 1885); aged 58; died suddenly, April 16, at Fleetwood, of cerebral hemorrhage.

Elizabeth Wallace Smith, Atlanta, Ga.; Woman's Medical College and Hospital of Philadelphia, 1877; aged 71; died, May 15, at Berkeley, Calif.

Andrew T. Crossett, Gibsonburg, Ohio; College of Physicians and Surgeons, Baltimore, 1897; aged 62; died, July 9, following a long illness.

Edmund Schollderfer ✠ Yorktown Heights, N. Y.; Medical Department of the University of the City of New York, 1882; aged 68; died, June 26.

Arthur McCann Harrison ✠ Bowling Green, Ohio; Jefferson Medical College of Philadelphia, 1896; aged 49; died, June 27, of septicemia.

William S. Trichler, Bowling Green, Ohio; Toledo Medical College, 1896; formerly county coroner; aged 56; died, July 6, at a hospital in Toledo.

Thomas Newton Boue, Loda, Ill.; Rush Medical College, Chicago, 1866; aged 87; died, July 9, of pneumonia and arteriosclerosis.

Benjamin H. Knotts, Orangeburg, S. C.; Medical College of the State of South Carolina, Charleston, 1866; aged 87; died, June 25.

John Taylor Williams, Charlotte, N. C.; Leonard Medical College, Raleigh, 1886; died suddenly, June 8, of cerebral hemorrhage.

Clarence C. Wasson, Hamilton, Ohio; Medical College of Ohio, Cincinnati, 1893; aged 58; died, June 21, of diabetes mellitus.

John Thomas Fitzsimon ✠ Castroville, Texas; Memphis (Tenn.) Hospital Medical College, 1892; aged 62; died, June 28.

Stephen Patrick Cavanagh ✠ Point Reyes Station, Calif.; Cooper Medical College, San Francisco, 1893; aged 55; died, May 20.

Edward Erle Harvey, Peterboro, Ont., Canada; University of Toronto Faculty of Medicine, 1893; aged 67; died, May 20.

John Macoun, Campbellford, Ont., Canada; University of Toronto Faculty of Medicine, 1886; aged 68; died, May 11.

Joseph A. Ulsh, Lykens, Pa.; Medical College of Ohio, Cincinnati, 1878; aged 69; died, June 12, of cerebral hemorrhage.

William John Wilson, Toronto, Ont., Canada; University of Toronto Faculty of Medicine, 1876; aged 72; died, May 19.

Rice M. Shaw, Oklahoma City, Okla. (licensed, Oklahoma, under the act of 1908); aged 50; died, June 30.

Fred Joseph Raven, Los Angeles; Keokuk (Iowa) Medical College, 1898; aged 49; died, June 24.

Thomas G. Hunt, St. Louis; American Medical College, St. Louis, 1901; aged 55; died, June 30.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE JOURNAL'S BUREAU OF INVESTIGATION, OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER GENERAL MATERIAL OF AN INFORMATIVE NATURE

AN ANESTHETIC MONOPOLY?

Is One Firm to Have the Exclusive Right to Make Dry Nitrous Oxid Gas?

The letter which follows tells its own story:

To the Editor:—Nitrous oxid is an official drug for which certain standards of purity are demanded in the United States Pharmacopoeia. To raise these standards and produce an ever purer product should always be the aim of any honest manufacturer. It becomes a serious affair if attempts in this direction are prohibited by law and if a patent is issued to a corporation for a pure nitrous oxid gas. This seems unbelievable—yet through inadvertence, accident, or mistake a patent has been granted on April 22, 1924, covering:

Claim 5: A nitrous oxid gas in which the moisture-content is so highly reduced that a deposit of frost will not be formed at the outlet orifice, or in the mechanism carrying the gas under high pressure when said gas is reduced from said high pressure to a pressure sufficiently low for anesthetic purposes.

Claim 6: A highly compressed nitrous oxid gas in which the moisture-content is so reduced that the gas will flow freely and continuously without formation of frost.

Claim 7: A compressed nitrous oxid gas in which the moisture-content does not exceed one-hundredth of one per cent.

These are the abstracts from the patent which was by the inventor [one T. A. Swartz.—ED.] assigned to a large Eastern Company [the S. S. White Dental Mfg. Co.—ED.], who lost no time and mailed two weeks after the patent was issued the following letter:

Gentlemen:—This is to notify you that letters patent of the United States No. 1,491,740 was granted to us on April 22, 1924, as assignee of T. A. Swartz for anhydrous Nitrous oxid and that the nitrous oxid produced and sold by you as anhydrous or dry gas infringes said patent.

Because of this infringement we hereby demand that you respect our rights under this patent by promptly discontinuing the manufacture and sale of anhydrous or dry nitrous oxid.

It appears to be in the interest of the medical profession to have their attention called to such cases. It matters little what the quarrels of commercial organizations are, but it matters much if out of these quarrels there arises the spectre of monopoly with its camp followers. In the interest of man pharmaceutical compounds must not become the sole property of a single concern.

Ingo Hachk, Western Nitrous Oxide Co., San Francisco.

The patent referred to by our correspondent (No. 1,491,740; issued April 22, 1924) was assigned by the patentee to the S. S. White Dental Mfg. Co. The specifications of the patent describe a process for making nitrous oxid having a moisture-content reduced to the point so low that when the gas passes from a high to a low pressure frost will not be deposited in the mechanism or at the outlet. The patentee claims patent rights not only in his process for reducing the moisture-content and in nitrous oxid manufactured by that process, but in all nitrous oxid whatsoever conforming to the arbitrary standards stated in his claims, no matter how manufactured. The process, if novel, is presumably worthy of patent protection; it is the fruit of the inventor's brain. But nitrous oxid has been recognized as a chemical entity since 1776, and it has long been possible to reduce within certain limits, by various processes, the moisture-content incident to its manufacture. By what course of reasoning the patentee claims to have "invented" nitrous oxid of low moisture-content, and how the Patent Office came to concede his claim, are beyond the comprehension of persons not versed in the mysteries of patent logic and patent law.

The patentee claims, and the Patent Office assumes authority to grant, exclusive patent rights in "a compressed nitrous oxid gas in which the moisture-content does not exceed one-hundredth of one per cent." In other words, he claims to have purified nitrous oxid, by a single named process, to a degree not theretofore attained; and he then claims, and the patent purports to concede, patent rights in all nitrous oxid purified either to or beyond that degree, by any and every process existing or yet to be devised.

In other words, the patentee claims merely to have succeeded somewhat better than his predecessors in separating two well-known substances, nitrous oxid and water. If this principle of patent law be conceded, any one who succeeds by a stated process in purifying any useful substance to a degree beyond that hitherto attained is entitled to the exclusive patent rights in that product when purified to that degree or to any greater degree, by whatsoever process the purification is brought about. The principle needs but to be thus stated to demonstrate its absurdity. But more than that, the granting of such a patent tends to defeat the only purpose for which patents can lawfully be issued, namely, "to promote the progress of science and useful arts;" for it removes during the life of the patent every substantial inducement for further research in the field, by any one else, for better and more economical means of making the product, or of improving it, since should such a research worker succeed, he must in the marketing of his product find himself at the mercy of the prior patentee, who under the guise of royalties can extort from him whatever levy he sees fit.

The present situation is of peculiar interest to the medical and dental professions. It certainly would not be in the public interest for any one concern to obtain a monopoly on nitrous oxid which is free from moisture. When one bears in mind that in patent litigation the firm with the longest purse is likely to be the victor we can only express the hope that the S. S. White Dental Mfg. Company will not be able to secure a monopoly of dry nitrous oxid. The sympathy of the medical profession will be with the firms who will insist on their rights to market the gas and to render it moisture-free by any process that does not infringe on Patent No. 1,491,740.

And what shall be said of the lack of intelligence exhibited by the Patent Office in granting such a patent? All that can be said is that it is the same office that granted a patent to Elisha Perkins for his "Tractors"; that granted a patent to Hercules Sanche for his preposterous gas-pipe fake, the "Oxydonor"; that granted a patent on a preparation that was alleged to confer immunity against diphtheria, syphilis, tuberculosis and other conditions; that granted a patent for a method of flavoring Epsom salt; that granted a patent for a trap that was supposed to be swallowed for the purpose of catching tapeworms; that granted a patent for an outrageous nostrum alleged to be a cure for consumption; that granted a patent for a necklace that was supposed to cure goiter—but why go further? One cannot do better than quote from an editorial that appeared June 2, 1924, in that staid publication *Chemical and Metallurgical Engineering*. In this the editor well summed up the matter by saying:

"Some day we may want to change the Patent Office from a mill in which $1,800 clerks are grinding out grist for $20,000 patent lawyers. We may even find it desirable to revise our definition of patentability in such a way as to make it possible to separate the wheat from the chaff, to cull out the worthless and fraudulent and to make the granting of a patent mean something more than mere novelty and lack of interference."

Clinical Week in Medical Centers.—The fourth annual series of "Medical Days" has just been held at Brussels. Toulouse and Lille are also organizing a clinical week along the same lines. The mornings are reserved for operations and clinics in the hospitals, the afternoons for lectures with motion pictures, mostly by visiting specialists, in three days the latest progress is reviewed. The fourth day was spent in the hospitals of Liége. The fee for the four days is 40 francs. The Toulouse series included a gala representation of Molière's "Malade imaginaire" at the main theater.

Correspondence

THE SIDESHOW OF THE CIRCUS

To the Editor:—The sideshow is commonly regarded as blood-curdling and mirth-provoking. It has become a by-word to indicate lightness, hilarity and utter nonsense.

So yesterday, with my friend Dr. Donald Shoemaker and his four small sons I visited the sideshow before entering the big circus tent. I enumerate some of the exhibits:

1. A number of small cretins.
2. A case of acromegaly—a man 8½ feet tall.
3. Two albinos, mentally subnormal, who seemed unhappy, uncomfortable and constantly blinking, advertised as "men from Mars."
4. A sad case of rickets, advertised as a "man from Borneo."
5. A pathologic case of obesity, a young girl weighing over 600 pounds.
6. A man with pathologic and abnormal growth of hair over his face and body, advertised as the "dog man."
7. Three healthy-looking young girls about 18, advertised as "triplets."
8. A case of progressive muscular atrophy, well advanced, advertised as the "rail man."

There were others. The sideshow to a medical man is a collection of pathologic and abnormal individuals which affords him a more or less interesting field of study. But I raise the question, Does it seem right or decent that these unfortunate persons should be exposed to the gaze of the public and thus exploited? There was a time when the insane were exhibited for a fee to the public on account of their antics; but that day has passed. Let us hope that the day may soon come when unfortunate persons of the classes I have enumerated as having seen in sideshows of the circus may no longer be exposed to the gaze of the curious for a small fee.

THEODORE DILLER, M.D., Pittsburgh.

"RELATIONSHIP BETWEEN CERTAIN PRODUCTS OF METABOLISM AND ARTERIAL HYPERTENSION"

To the Editor:—In Dr. Major's article in THE JOURNAL (July 12, p. 81), he quotes Shaw as saying that "so far, to date, no metabolite has been discovered which is pressor in type," and continues: "I have succeeded I believe, in demonstrating that there is a metabolite which is pressor in type and produces a sustained rise in blood pressure, unequaled by any hitherto described substance." He then describes a series of experiments to show that the guanidin bases have a powerful pressor effect.

In an article that I published in 1900, "The Rôle of the Alloxuric Bases in the Production of the Cardiovascular Changes of Nephritis" (*Am. J. M. Sc.*, November, 1900) I said:

"The production of an endarteritis in the renal arterioles by the alloxuric bases led us to investigate the effect of these substances on the systemic blood vessels, the heart and the arterial pressure. . . . Their chief representatives are xanthin, hypoxanthin, adenin, guanin." In my experiments, xanthin and hypoxanthin were employed in place of adenin or the guanin of Dr. Major. The results obtained are summarized in these sentences: "From these experiments we draw the following conclusions: Xanthin and hypoxanthin are capable of producing a rise in arterial pressure which may be due to arterial spasm, increased heart action or both. . . . Xanthin and hypoxanthin, therefore, representative members of the group of alloxuric bases, are capable of

producing the cardiovascular changes in those forms of nephritis in which the retention of excrementitious substances precedes the lesions of the heart and arteries."

ALFRED C. CROFTAN, M.D., Chicago.

BARIUM MEAL IN ROENTGENOLOGY

To the Editor:—I note the interesting communication of Dr. H. T. Summersgill (THE JOURNAL, July 12, p. 139), regarding the use of barium sulphate and malted milk in gastro-intestinal roentgenography. I have also noticed the condition in several instances. It is true, however, that I have not noticed the extremely severe after-effects which Dr. Summersgill has reported. In the cases I have observed, there was a marked gastric distention, which was followed by nausea and belching, and, in one case, by vomiting. This was followed by severe diarrhea, which lasted about twenty-four hours.

Later, I tried giving another barium meal to two of these patients. In one case, I used buttermilk as the base; and in the other, a mucilage of acacia formula. There was absolutely no difficulty experienced following these mixtures. Since then I have not attempted the use of malted milk in those cases which exhibit emaciation, cachexia and achlorhydria.

I do not wish to belittle the value of malted milk in the barium meal; yet, I feel that it is not proper to use it as a routine measure. It is evident that there occurs, in the process of digestion, fermentation which is of such a type that it cannot be properly controlled by the abnormal gastric and intestinal secretions, which exist in certain types of cases.

S. A. LEVEY, M.D., St. Louis.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

THE ENDOSTEUM

To the Editor:—For years I have been hunting for any such structure as an "endosteum," and have never been able to find it. Can you give me any information as to what it looks like, and how it can be identified?

LEONARD W. ELY, M.D., San Francisco.

ANSWER.—This question was referred to Dr. S. L. Haas, who says: "Endosteum means within bone, and is defined as 'the vascular membranous layer of connective tissue lining the medullary cavity of bones.' In some of the textbooks of histology it is stated to be an osteogenic membrane of fibrocellular tissue on the medullary surface of bone and to be similar to the innermost layers of the periosteum. Another name applied to this structure is membrana medullaris, or periosteum internum.

"Embryologically, the endosteum is a derivative of the periosteum, being brought into the center of the primary cartilage with the periosteal buds, which are actively concerned in the forming of the primary marrow cavity. It is a very delicate membrane composed of long, fusiform cells in which are varying numbers of osteoblasts. It is more or less adherent to the cortical bone on one side, and graduates into the marrow tissue on the other side. In sections of young bones it is often seen torn away from the bone. Undoubtedly, some confusion has arisen over the description of the endosteum as being a membrane, and the expectation of one's being able to peel it off in a definite strip. However, if one stops to think of the architecture of the lining of the medullary cavity with its numerous indentations and projections, and also of the fact that endosteum is contiguous with the lining of the haversian canals, such an erroneous idea will be quickly dispelled. In order to remove the endosteum, it is necessary to curet the lining of the medullary cavity, and in the article referred to in your editorial (THE JOURNAL, May 24, p. 1694) special mention is made of this fact.

"The reparative properties of the endosteum are best studied in the healing of fractures. It is easy to see the proliferation of this osteoblastic tissue in its various stages to form the cartilaginous, osteoid and osseous endosteal or medullary callus. Not only is there a definite healing response at the site of the fracture, but there is a considerable reaction extending well back along the inside of the bone.

"It is believed that the term endosteum satisfactorily designates the osteogenic tissue on the medullary surface of bone. It is hoped that the foregoing description will be sufficient for its identification and location."

SALVAROLS — INSULOLS

To the Editor:—Knowing the valuable work of the Council on Pharmacy and Chemistry, I hereby apply for your advice whether or not the Drug Products Company of Long Island City is a reliable concern, and if its products "salvarols" for rectal administration of arsphenamin, and "insulols" for rectal administration of insulin are pure, reliable and ethical. As far as I can remember, they have not been listed by the Council as reliable medications. I am not complimenting the Council, but I must say that the work it has accomplished is of great importance, and as a Fellow of the American Medical Association, I am not justified in using a product unless it is passed and adopted by the Council.

NATHAN ALPERT, M.D., Baltimore.

ANSWER.—No product of the Drug Products Company has been accepted for New and Nonofficial Remedies. On the other hand, the following products of the firm were reported on unfavorably by the Council: Pulvoids Calcylates (THE JOURNAL, Sept. 9, 1916, p. 827; Propaganda for Reform **2**:85); Pulvoids Calcylates Compound (THE JOURNAL, June 14, 1919, p. 1784; Propaganda for Reform **2**:226); Pulvoids Natrium Compound (Annual Reports of the Council on Pharmacy and Chemistry, 1916, p. 69; Propaganda for Reform **2**:108).

Salvarols are stated to be rectal suppositories containing arsphenamin. The lack of evidence for the value of the rectal administration of arsphenamin has been the subject of a report of the Council (THE JOURNAL, Oct. 30, 1920, p. 1219; Propaganda for Reform **2**:274). Recently, THE JOURNAL published a report on the rectal administration of arsphenamin by Littman and Hutton (THE JOURNAL, March 15, 1924, p. 868). In this report, the investigators conclude that the clinical results obtained by the rectal administration of arsphenamin were too feeble, as compared with treatment by the intravenous or intramuscular methods, to warrant favorable consideration of this treatment in congenital syphilis.

Insulols are stated to be suppositories made "with carefully selected desiccated pancreas including the islands of Langerhans containing insulin in a safe and reliable form." We know of no evidence for the value of this product. It was pointed out in THE JOURNAL, Sept. 1, 1923, p. 752, that the rectal administration of insulin had been tried without success, although experiments on animals (this issue, p. 301) indicate that absorption may occur in some instances.

TREATMENT OF EMPYEMA — SIGNIFICANCE OF HYPOGLYCEMIA AND HYPERGLYCEMIA

To the Editor:—1. What has finally been accepted as the most approved treatment of acute empyema of the chest? 2. Please indicate briefly the clinical significance of a blood sugar below normal and a blood sugar above normal.

H. K. STOCKWELL, M.D., Salem, Ore.

ANSWER.—**1.** There is no finally accepted and most approved method for treating acute empyema, because each case presents individual problems. The so-called closed method of treatment was discussed in THE JOURNAL by Bettman, Feb. 2, 1924, p. 359, who reports good results in a series of cases. It is obvious that this simple procedure is not suitable in all cases, and that the type of infection and the condition of the patient would render its use in some cases inadvisable. A more radical operation was described by Pickhardt (*Archives of Surgery* **8**:293 [Jan.] 1924), who, in a small series of cases, resected a rib, opened the pleura, cleansed the pleural cavity, and then closed this wound, after establishing closed drainage at a lower position. It is also obvious that this procedure is too severe to be used in many cases. Empyema due to the pneumococcus tends to become localized, the pus is thick, and heavy fibrin deposits form which preclude good drainage by the closed method. Streptococcus empyema does not generally localize in abscesses or pockets, the pus is thin, and drainage by the closed method may be obtained. The

treatment of 100 cases of empyema was analyzed by Beye in *Minnesota Medicine* (June, 1923), and there is an editorial review by Binnie in the *Archives of Surgery* (**2**:627 [May] 1921). Reprints and reports on the subject may be obtained through the "Package Library" of the American Medical Association.

2. The clinical significance of hypoglycemia is closely associated with the administration of insulin. It is the result of an overdose of insulin, and is accompanied by the development of symptoms that demand immediate treatment. The patient complains of weakness and fatigue, associated with sweating, tremulousness and sometimes pallor and flushing. In the severe forms there is acute distress, with mental disturbances and even unconsciousness. Symptoms develop, according to the Insulin Committee of the University of Toronto, when the blood sugar falls to 0.07 per cent., and the patient becomes unconscious when it reaches 0.035 per cent. These symptoms are completely relieved if glucose is given immediately. Even before the introduction of insulin, hypoglycemia had begun to appear as a serious factor in the treatment of diabetes. Joslin, who reports a number of such cases (Treatment of Diabetes, Philadelphia, Lea and Febiger, 1923), says that it was first thought that prolonged undernutrition was necessary to produce a threateningly low blood sugar, but it seems now that it can develop in the course of a few hours. It appears from Gray's study (Blood Sugar Standards, *Archives of Internal Medicine* **31**:241 [Feb.] 1923) that the blood sugar may be somewhat below normal in some cases of hypothyroidism, acromegaly and other diseases, but its clinical significance, today at least, is slight compared with that of hypoglycemia due to an overdose of insulin.

Hyperglycemia also is significant in its relation to insulin and diabetes. When the lasting blood sugar is constantly above 0.12 per cent., it indicates the presence of diabetes; the same is true, according to Joslin, when the blood sugar is 0.18 per cent. after a meal. If we accept 0.1 per cent. as the normal percentage of blood sugar, the reports of Gray and others show that, at times, the blood sugar is above normal in many diseases, and even in persons considered to be in good health.

EXPENSE OF ATTENDING ANNUAL SESSION AND INCOME TAX

To the Editor:—I was in attendance at the Annual Session of the American Medical Association. I drove my car from Kansas to Chicago and return. Please give me your advice as to how much of the expense of this trip I may be able to enter in the exemption column in my income book.

M.D., Kansas.

ANSWER.—Under the Revenue Act of 1921, the Commissioner of Internal Revenue held that expenses incurred by a physician in attending a meeting of a medical society could not be deducted in computing the physician's income tax. While the phraseology of the Revenue Act of 1924, relating specifically to such expenses, is identical with the phraseology of the earlier act, the later act lays down a new rule of interpretation that may lead the commissioner to a different conclusion. It provides, too, for a board of appeals, independent of the commissioner, to which his decisions can be carried for review.

At the present time, therefore, it is impossible to say whether the traveling expenses incurred in attending the recent session of the American Medical Association will or will not be regarded by the Commissioner of Internal Revenue as deductible in the computation of one's income tax under the new law, or to say what the board of appeals will hold if he denies the deductibility of such expenses and an appeal is taken.

The Bureau of Legal Medicine of the American Medical Association has consistently held that such expenses were deductible under the act of 1921, and believes that they are deductible under the new act. It is advised that physicians tentatively enter convention expenses in their current accounts as one of the deductible expenses of medical practice, leaving final determination until the time comes to file returns next year.

So much of the expenses should be tentatively so entered as were reasonably necessary to the business in hand; that is, the expenses incident to travel by the most direct practical route, and without detours or delay for pleasure purposes, and cost of room and meals, carfare and incidental business expenses while in Chicago. Expenses of recreation, and expenses of other members in the party, if any, should not be included.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

ALASKA: Juneau, Sept. 2. Sec., Dr. Harry C. DeVighne, Juneau.
PORTO RICO: San Juan, Sept. 2. Sec., Dr. D. Biascoechea, San Juan.

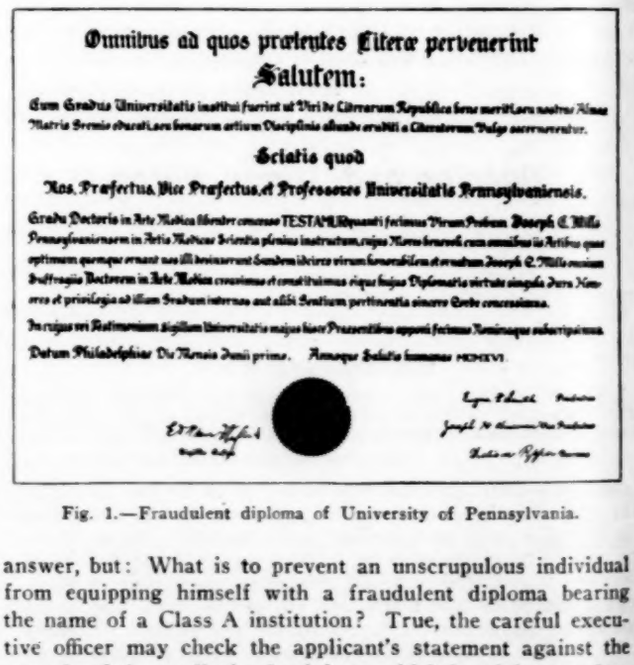
A STUDY IN DIPLOMAS

CHARLES B. PINKHAM, M.D.
Secretary-Treasurer, Board of Medical Examiners, State of California
SAN FRANCISCO

This article is presented without intent to reflect on any innocent party, inspired as it is with an honest intent to find some dependable means whereby state boards of medical examiners may be safeguarded against imposition by questionable diplomas.

With that thought in mind, how many executive officers of licensing boards are sufficiently familiar with the general appearance, text and official signatures of diplomas issued in the name of various medical schools (though questionable degrees are by no means confined to medical diplomas), and are able to differentiate a spurious from a genuine diploma?

In a burst of self-confidence you exclaim, "Our board will accept only diplomas from Class A schools." An admirable



Omnibus ad quos praesentes Literae pervenerint
Salutem:

Cum Gradus Universitatis instituti fuerint ut Viri de Civitatum Republica bene meriti Laris nostrae Almae Matris Premio ornati Laris Senatum artium Disciplinis aliunde eruditi a Civitatum Fidei surrogentur.

Sciatis quod

Nos, Praefectus, Vice Praefectus, et Professores Universitatis Pennsylvaniensis,

Gradu Doctoris in Arte Medica libenter concesso TESTAMUR Aequanti fecimus Virum Probum, Joseph C. Mills Pennsylvaniensem in Artis Medicae Scientia plenius instructum, cujus Mores Senatui cum omnibus in Artibus quae optimum quemque ornant non ill benevolent Sunderm ibidem virum honorabilem et eruditum Joseph C. Mills eximium Suffragio Doctorem in Arte Medica creavimus et constituimus atque hujus Diplomatis virtute singula Jura Honores et privilegia ad illum Gradum internos aut aliis Gradibus pertinentia sincere Corde concessimus.

In cujus rei Testimonium Sigillum Universitatis majus hisce Praesentibus apponi fecimus Nominaque subscripsimus.

Datum Philadelphiae Die Nonis Junii primo. Annoque Salutis humanae MCMXVI.

Fig. 1.—Fraudulent diploma of University of Pennsylvania.

answer, but: What is to prevent an unscrupulous individual from equipping himself with a fraudulent diploma bearing the name of a Class A institution? True, the careful executive officer may check the applicant's statement against the records of the medical school from which he claims graduation, but we must admit that some state boards do not take this precaution. There are some examining boards that do not even require an applicant to present his diploma, nor do they make an investigation of his medical college record. Instead of checking up the applicant's record, they accept his personal affidavit that *he has* a diploma granting the degree "Doctor of Medicine."

Such a case was recently uncovered in Wyoming in which Joseph Francis O'Donnell, reported as falsely claiming graduation from both the New York Homeopathic Medical College and Columbia University (denied by both medical colleges), was licensed by the Wyoming board some ten years ago. We are informed that the Wyoming board accepted, without verification, O'Donnell's statement that he had graduated "at the age of 23 from a four years' course in

medicine and surgery at Columbia University." Recent reports from the Wyoming board relate that the license of John Francis O'Donnell was revoked at the February, 1924, meeting on the basis of "a false and fraudulent application."

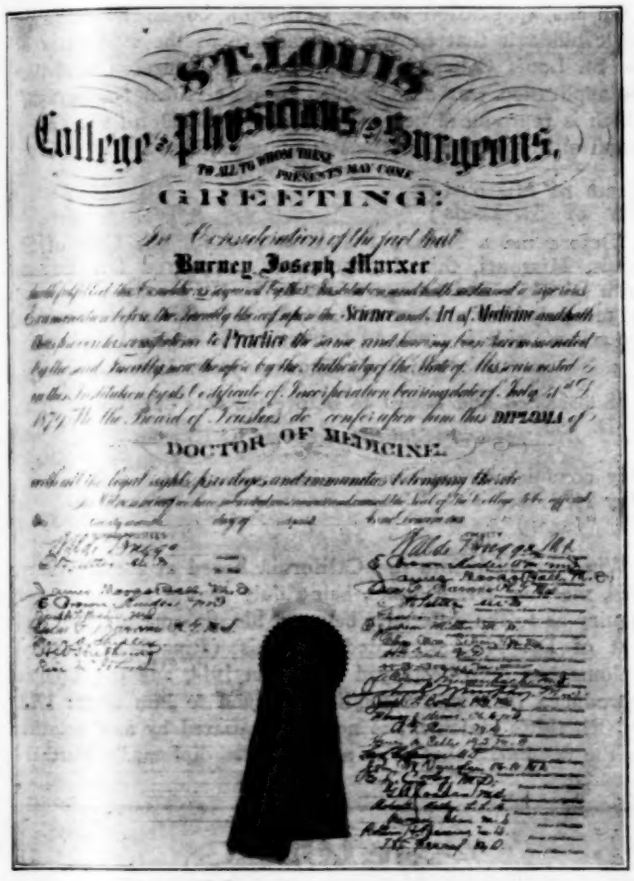

ST. LOUIS
College of Physicians & Surgeons.
TO ALL TO WHOM THESE PRESENTS MAY COME
GREETING:
Barney Joseph Marxer
DOCTOR OF MEDICINE.

Fig. 2.—Diploma of Dr. Barney Joseph Marxer.

Applicant 1121 (C. B.) attempted to hoodwink the medical examiners of California in a similar manner in 1915. On his application, duly attested before a notary public, he asserted that he had graduated from the Atlanta Medical College, June 1, 1907. When questioned as to his failure to produce his diploma, he claimed that he had addressed his diploma to us, deposited it *on* a mail box in his home town, and thereafter it had disappeared. When confronted by a statement from the Atlanta Medical College denying his graduation, he piteously acknowledged his false affidavit and begged us not to prosecute.

How the diploma of a Class A medical college may be manipulated is best illustrated by the following narrative:

In May, 1923, our attention was directed to the arrest of a "Dr." J. S. Barker, charged by the Los Angeles authorities with issuing a check without sufficient funds, signed "J. S. Barker, M.D." The Bulletin of the Los Angeles Police Department refers to him as John Samuel Barker, alias Baker, Barber, Parker, Mills, etc.

At the Stagg Photo Company in Los Angeles, Barker had photographs made of several diplomas, among them being the diploma here reproduced. At first glance one would presume this to be a bona fide 1916 diploma of the University of Pennsylvania.

The photograph of this alleged University of Pennsylvania diploma was submitted to Dean William Pepper, who wrote us:

"I am sending you a photostat copy of a diploma of the year 1916 which I think will interest you, as this is the year that the fraudulent diploma with Joseph C. Mills' name on it was dated.

"I think it was in 1900 that the University of Pennsylvania changed the style of its diploma. The wording of the fraudulent diploma is the wording of the old style diploma used up to 1900, except at the very bottom of the fraudulent diploma he has copied the new style of diploma, the only difference being that the old style diploma had no place for the Dean's signature, whereas our present diplomas have down in the lower right hand corner a place for the Provost, Vice-Provost and Dean to sign. . . . If you will compare the signatures of Dr. Smith and Dr. Penniman and Mr. Robins, the Secretary, you will notice what a poor piece of work the forger did. My name is a little better. I hope you will have some more news about Mr. John Samuel Barker and I trust the original of this fraudulent diploma will fall into your hands."

We voice Dr. Pepper's hopes that this fraudulent diploma may be confiscated. State boards should keep watch, as Barker, now a fugitive from justice, wanted by the Los Angeles police department, may land in any state.

Vigilance is demanded in the earnest investigation of all diplomas, for no institution is safe from the diploma monger's traffic in fraudulent documents, as has been graphically illustrated in the recent diploma mill frauds exposed in Missouri.

After reading the report[1] that Edward J. Meelbusch had purchased a diploma of the St. Louis College of Physicians and Surgeons for $750, we determined to make a survey of our collection of the photographs of the diplomas of that institution. We were greatly surprised to find that we had photographs of several varieties of diplomas bearing the name "St. Louis College of Physicians and Surgeons," which led me to write this article, offering an opportunity for exercise

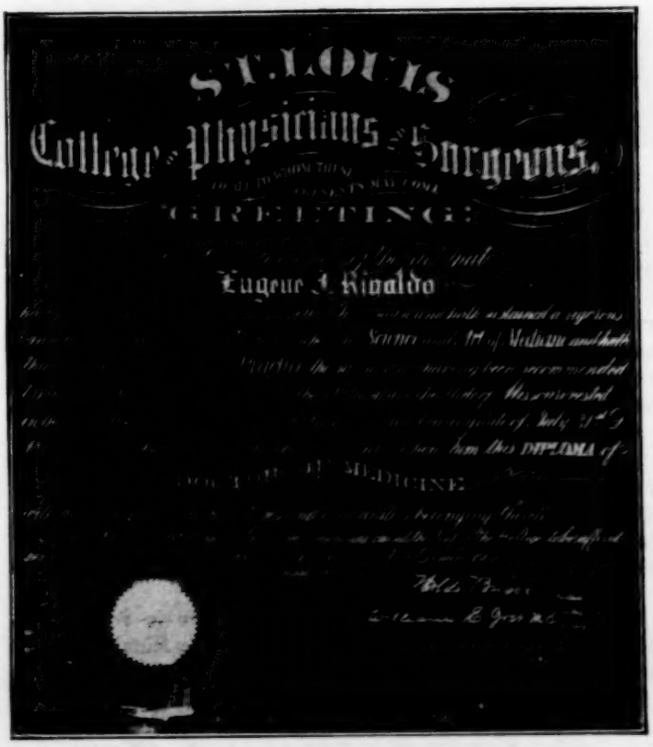

ST. LOUIS
College of Physicians & Surgeons.
GREETING:
Eugene J. Rinaldo
DOCTOR OF MEDICINE.

Fig. 3.—Diploma of Dr. Eugene J. Rinaldo, 1908.

of the intuitive ability in an attempt to draw, as Conan Doyle was wont to say, "logical deduction from simple facts." Can the reader determine:

1. Why there are at least four types of diplomas bearing the name St. Louis College of Physicians and Surgeons?

1. Federation Bulletin, November, 1923, p 251.

2. Why there is a lack of uniformity of signatures?

3. Why the signatures in some instances are on the lower left of the diploma, and in others on the lower right, while in others the signatures appear on both sides?

4. Why the seal of the St. Louis College of Physicians and Surgeons appears first on one side, then on the other, and at times in the center of the lower portion of the diploma?

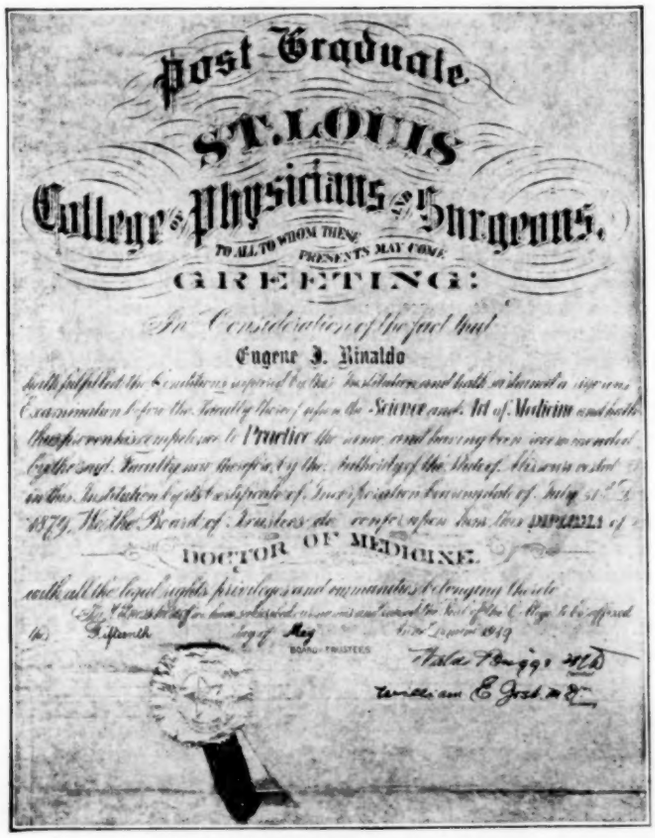

Post-Graduate
ST. LOUIS
College of Physicians and Surgeons.
TO ALL TO WHOM THESE PRESENTS MAY COME
GREETING:
In Consideration of the fact that
Eugene J. Rinaldo
hath fulfilled the Conditions required by this Institution and hath sustained a rigorous Examination before the Faculty thereof upon the Science and Art of Medicine and hath thus proven his competence to Practice the same and having been recommended by the said Faculty, now therefore by the Authority of the State of Missouri vested in this Institution by its Certificate of Incorporation bearing date of July 31st A.D. 1879 We the Board of Trustees do confer upon him this DIPLOMA of
DOCTOR OF MEDICINE
with all the legal rights privileges and immunities belonging thereto
In Witness whereof we have subscribed our names and caused the Seal of the College to be affixed this Fifteenth day of May A.D. 1919
BOARD OF TRUSTEES

Fig. 4.—Diploma of Dr. Eugene J. Rinaldo, 1919.

Unfortunately, we have no photographs of diplomas of the St. Louis College of Physicians and Surgeons dated between 1910, when the diplomas showed the signatures of a number of members of the faculty as well as the board of trustees, and the 1918 diploma of Albert H. H. Scheffsky whereon, in the lower left corner, appear the names Waldo Briggs, president, William E. Jost, secretary, and in the lower right corner the name Lawrence Mendonsa, M.D.

According to the affidavit of Waldo Briggs, dean, executed April 9, 1924, "The Faculty and Board of Trustees did not appear [on the St. Louis College of Physicians and Surgeons diploma] after 1914." This affidavit asserts that "the type of diploma issued is the same since 1879, except names of Trustees and Faculty"; one may visualize for oneself and observe the difference in the illustrations presented.

The 1908 diploma of Dr. Barney Marxer is reproduced (Fig. 2) to be compared with that of Eugene Rinaldo of the same date (Fig. 3).

The diploma of Dr. Marxer is much the longer, to afford space for the signatures of members of the faculty and board of trustees; also, over the signatures on the left side, are the words "Board of Trustees," while over the signatures on the right appears the word "Faculty." In comparing this with the diploma of Dr. Rinaldo of the same date, one will note that the general appearance of the diplomas is practically the same, but the words "Board of Trustees" are in the center of Rinaldo's diploma, and the word "Faculty" does not appear. Only two signatures appear in the lower right hand corner of the Rinaldo diploma, and there are no lines provided for additional signatures, which gives the impression that the diploma has been cut off.[2] On the Rinaldo diploma the college seal has been placed over four lines on the left side, whereas on Dr. Marxer's diploma the college seal is in the center line.

On his application to the California board, Dr. Rinaldo made affidavit that he was a graduate of the 1908 class of the St. Louis College of Physicians and Surgeons, and that his application was accompanied by a "certified photograph," which is reproduced here. On the reverse side of the photograph of this diploma is the following affidavit:

"State of Missouri }
City of St. Louis } ss

"Before me a Notary Public in and for the City of St. Louis, Missouri, this day personally appeared Dr. Eugene John Rinaldo, and known to me to be the person who being by me duly sworn upon oath, states that this photograph on the reverse side is true and correct of his original diploma.

"(Signed) EUGENE JOHN RINALDO, M.D.

"Subscribed and sworn to before me this 8th day of June, A. D., 1922. "(Signed) GUSTAV E. ENDERS,
"Notary Public.

"My commission expires
May 11, 1923.
"(SEAL)"

When called before the California board at the February, 1924, meeting, Dr. Rinaldo, being duly sworn, answering our inquiry as to the difference between his diploma of 1908[3] and that of Dr. Marxer, stated that his (Rinaldo's) original diploma had been destroyed by fire in 1914, and the diploma reproduced here was a duplicate issued to him about 1918. Dr. Rinaldo's statement is not substantiated by any notation on the document that it is a "duplicate diploma." Furthermore, in his affidavit as quoted, he has stated: "This photograph on the reverse side is true and corrcet of his *original* diploma."

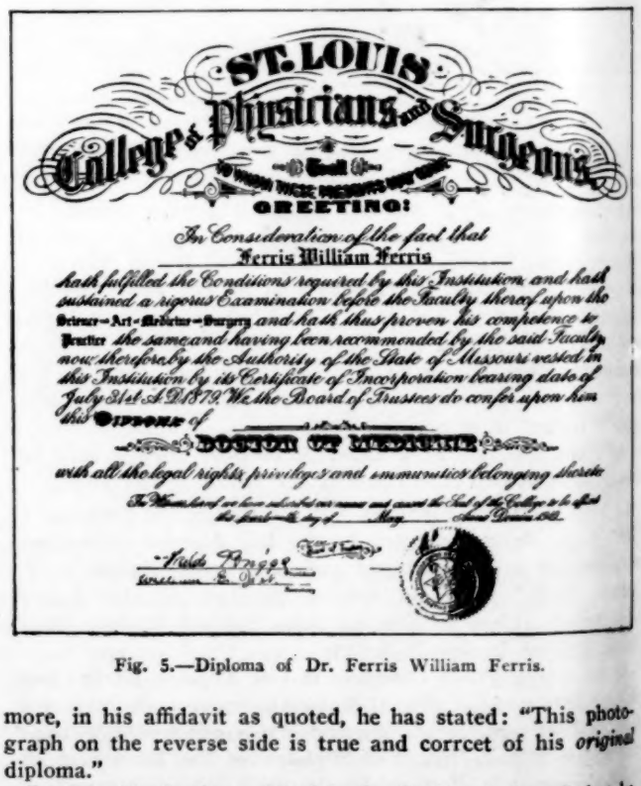

ST. LOUIS
College of Physicians and Surgeons
GREETING:
In Consideration of the fact that
Ferris William Ferris
hath fulfilled the Conditions required by this Institution and hath sustained a rigorous Examination before the Faculty thereof upon the Science—Art—Medicine—Surgery and hath thus proven his competence to Practice the same and having been recommended by the said Faculty, now therefore by the Authority of the State of Missouri vested in this Institution by its Certificate of Incorporation bearing date of July 31st A.D. 1879 We the Board of Trustees do confer upon him this DIPLOMA of
DOCTOR OF MEDICINE
with all the legal rights privileges and immunities belonging thereto
In Witness whereof we have subscribed our names and caused the Seal of the College to be affixed this Fourth day of May A.D. 1918
Waldo Briggs

Fig. 5.—Diploma of Dr. Ferris William Ferris.

Dr. Rinaldo further related to the California board that he reentered the St. Louis College of Physicians and Surgeons

2. Dr. Briggs' affidavit, already mentioned, states that the two name signatures of the faculty commenced after 1914.

3. The affidavit of Waldo Briggs, dean, dated April 9, 1924, states that Rinaldo graduated, May 15, 1919.

in 1918, and that the following year he received a postgraduate diploma of the St. Louis College of Physicians and Surgeons dated May 15, 1919. His "postgraduate diploma" has the same general characteristics, signatures, etc., as has his diploma of 1908, the only difference being the date of issue and the words "Postgraduate" engrossed at the top.

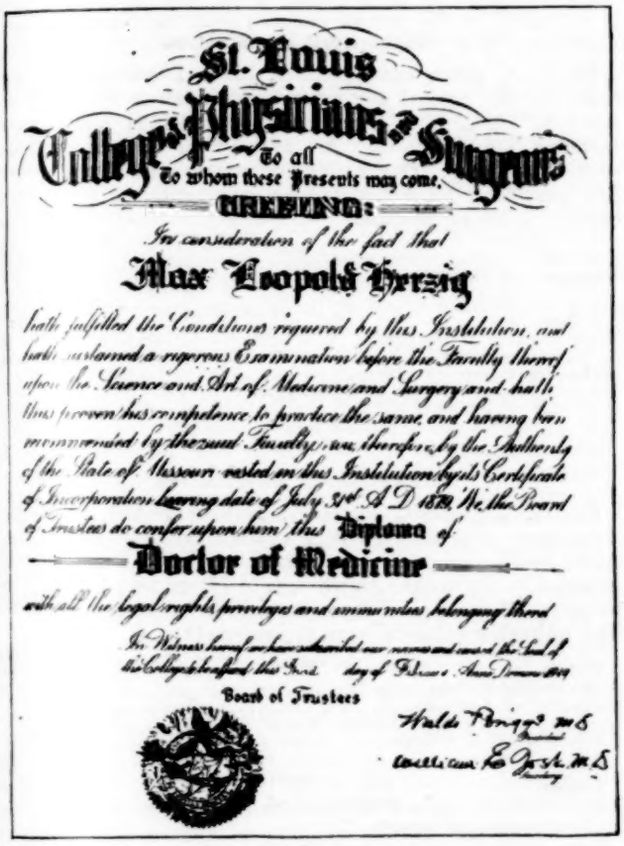

St. Louis
College of Physicians and Surgeons
To all
To whom these Presents may come,
GREETING:
In consideration of the fact that
Max Leopold Herzig
hath fulfilled the Conditions required by this Institution, and hath sustained a rigorous Examination before the Faculty thereof upon the Science and Art of Medicine and Surgery and hath thus proven his competence to practice the same, and having been recommended by the said Faculty, are therefore by the Authority of the State of Missouri vested in this Institution by its Certificate of Incorporation bearing date of July 31st A D 1872 We the Board of Trustees do confer upon him this Diploma of
Doctor of Medicine
with all the legal rights privileges and immunities belonging thereto
In Witness hereof we have subscribed our names and caused the Seal of the College to be affixed this 3rd day of December Anno Domini 1919
Board of Trustees
Waldo Briggs M.D.
William E. Jost M.D.
Secretary

Fig. 6.—Third type of 1919 diploma.

Strange that Dr. Rinaldo, claiming to have been a student at the St. Louis College of Physicians and Surgeons for four years (from 1904 to 1908) and claiming to have graduated with the class of 1908, is not known to practically all of the graduates of the 1908 class, according to their statements to the California board. The name Eugene Rinaldo, according to reports, does not appear in the college catalogues of the St. Louis College of Physicians and Surgeons for any of the years he claims to have been a student, nor is his name to be found in the official alumni list prior to 1919. The picture of the 1908 class does not show Eugene Rinaldo; however, the name of Dr. Barney Marxer appears in the list of graduates of 1908, and his photo in the class picture.

A statement from the St. Louis College of Physicians and Surgeons dated Jan. 10, 1921, signed by Dr. Waldo Briggs' rubber stamp signature, gives Rinaldo as a graduate of the year 1919, verified by an affidavit signed Waldo Briggs, dean, dated St. Louis, April 9, 1924.

If one compares the 1919 diploma of Eugene Rinaldo with that of Ferris William Ferris, who in 1921 was denied a reciprocity certificate in California on his Wyoming, 1920, credentials, it will be seen that the general type of Dr. Ferris' diploma is noticeably different from that of Dr. Rinaldo. Yet the Ferris diploma is dated May 14, 1919, and the Rinaldo diploma, May 15, 1919. On the latter part of the second line of the Rinaldo 1919 diploma are only the words "Science and Art of Medicine"; in the Ferris diploma, on the third line in different type, are the same words with the additional words, "and surgery."

The words "Doctor of Medicine" on the Ferris diploma are printed in straight line block type, as compared with the scroll-like arrangement of the same words on the Rinaldo 1919 diploma. On the Ferris diploma, there is scroll work about the words "Board of Trustees"; on the Rinaldo diploma they are arranged simply in a straight line. The Ferris diploma has the signatures of Waldo Briggs and William E. Jost on the lower left corner (neither name followed by M.D.), whereas, on the Rinaldo diploma, the signatures are on the lower right side, each name followed by "M.D."

Pandora's box is not yet empty, and attention is invited to a third type of a 1919 diploma (Fig. 6).

This 1919 diploma of the St. Louis College of Physicians and Surgeons is in the name of Max Leopold Herzig, dated Feb 3, 1919, approximately three months prior to that of Ferris and Rinaldo, although the affidavit of Waldo Briggs, dean, dated April 9, 1924, asserts that Herzig graduated, May 15, 1919. In comparing the general appearance of Dr. Herzig's diploma with that of the two just discussed, one should particularly notice on each the words, "To all to whom these presents may come."

On the diplomas of Ferris, Herzig and Rinaldo, one should compare the words, "Science and Art of Medicine and Surgery"; also the words "Doctor of Medicine" and the title "Board of Trustees." On the Herzig diploma (as in the Rinaldo diplomas), the signatures of Waldo Briggs and William E. Jost, each followed by M.D., are on the lower right corner.

A photograph of the diploma of Albert H. H. L. Scheffsky dated May 2, 1918, which for lack of space is not reproduced, is evidently from the same plate as the 1919 diploma of Ferris William Ferris. The resemblance is noticeable, with the one exception: in addition to the signatures of Waldo Briggs and William E. Jost in the lower left corner of each diploma, in the lower right corner of the Scheffsky diploma

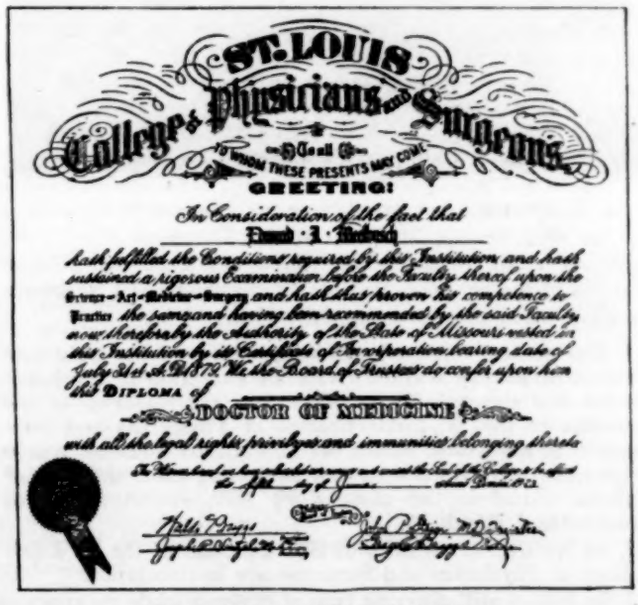

ST. LOUIS
College of Physicians and Surgeons
TO WHOM THESE PRESENTS MAY COME
GREETING!
In Consideration of the fact that
Edward J. Meelbusch
hath fulfilled the Conditions required by this Institution and hath sustained a rigorous Examination before the Faculty thereof upon the Science and Art of Medicine and Surgery and hath thus proven his competence to Practice the same and having been recommended by the said Faculty, are therefore by the Authority of the State of Missouri vested in this Institution by its Certificate of Incorporation bearing date of July 31st A.D. 1872 We the Board of Trustees do confer upon him this DIPLOMA of
DOCTOR OF MEDICINE
with all the legal rights privileges and immunities belonging thereto
In Witness hereof we have subscribed our names and caused the Seal of the College to be affixed this 5th day of June Anno Domini 1923
Waldo Briggs
Secretary
John A. Briggs M.D. President

Fig. 7.—Diploma of Edward Meelbusch.

appears the signature of Lawrence A. Mendonsa, M.D., and the seal of the college is placed in the center. Heavy shading of the letters of Dr. Scheffsky's name is noticeable, and does not appear in the engrossing of any other individual's name.

In comparing the diploma of Edward Meelbusch, dated June 5, 1923 (Fig. 7), reported[4] as purchased for $750, with the diploma of Peter B. Marinovich of the same date (Fig. 8),

4. Federation Bulletin, November, 1923, p. 251.

the difference is plainly apparent. The Meelbusch diploma somewhat resembles that of Ferris William Ferris, excepting that on the Meelbusch diploma the word "Diploma" and the words "Doctor of Medicine" each appear in clean-cut block letters, whereas the same words on the Ferris diploma are heavily shaded block type. The Meelbusch diploma shows four signatures: i. e., in the left hand corner the names Waldo Briggs (without M.D.) and Joseph R. Sintzel, followed by M.D., and in the lower right corner appear the signatures of John P. Stein, M.D. (Trustee) and Gray C. Briggs, M.D. One should compare the signature of John P. Stein on the Meelbusch diploma with that appearing on the Marinovich diploma.

What does it all mean—these four types of diplomas issued by the same medical college?

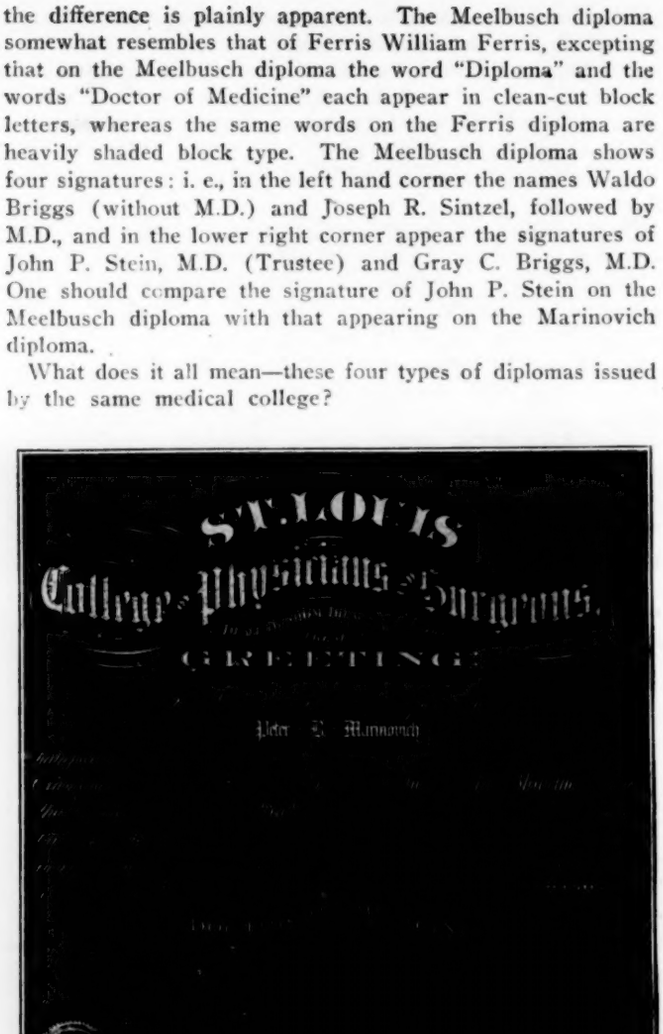


Fig. 8.—Diploma issued same date as that illustrated in Figure. 7.

In our study to determine which might be the genuine diploma of the St. Louis College of Physicians and Surgeons, we have made the following deductions:

1. The general form, type and appearance of the legitimate diploma of Barney Marxer (with the exception of the lower portion for signatures) is reflected in the majority of the diplomas of the St. Louis College of Physicians and Surgeons that have come under my observation. (Dean Waldo Briggs has already been quoted as stating that "the type of diploma issued is the same since 1879, except names of Trustees and Faculty").

2. At least three varieties of 1919 diplomas of the St. Louis College of Physicians and Surgeons are in circulation.

3. In 1923, a still different type of diploma made its appearance, as evidenced by the one issued in the name of Edward Meelbusch.

In the 1923 annual report of the Board of Medical Examiners of California is printed an article entitled, "Diploma Mills and Fraudulent State Licenses."

The minutes of the February, 1924, meeting of the California board records a voluminous "Report of the Investigation Committee on the Operation of the Diploma Mills."

Only two of the graduates of the St. Louis College of Physicians and Surgeons mentioned in this article have been licensed in California. One of these individuals obtained a California reciprocity certificate in 1922 based on his certificate or license issued by the Missouri Board, July 14, 1920, and we are now actively engaged in a thorough investigation of this case. The credentials of the other individual licensed by us in 1922 are unquestionably authentic.

Idaho April Examination

Mr. J. A. Jeter, commissioner, Idaho Department of Law Enforcement, reports the written examination held at Boise, April 1, 1924. The examination covered 11 subjects and included 110 questions. An average of 75 per cent. was required to pass. One candidate was examined and passed. Six candidates were licensed by reciprocity. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
University of Nebraska		(1921)	86.6

LICENSED BY RECIPROCITY			
College		Year Grad.	Reciprocity with
Johns Hopkins University		(1911)	Oregon
St. Louis University	(1907)	Washington, (1913)	Montana
Willamette University, Salem		(1908)	Oregon
Jefferson Medical College of Philadelphia		(1919)	Utah
University of Pennsylvania		(1889)	Washington

Hawaii April Examination

Dr. G. C. Milnor, secretary, Hawaii Board of Medical Examiners, reports the written examination held at Honolulu, April 14-17, 1924. The examination covered 8 subjects and included 56 questions. An average of 75 per cent. was required to pass. Of the 5 candidates examined, 4 passed and 1 failed. The following colleges were represented:

PASSED		
College	Year Grad.	Per Cent.
Rush Medical College	(1924)	87.5
University of Louisville	(1916)	75
University of Michigan Medical School	(1920)	85
Jefferson Medical College	(1922)	87

FAILED		
College	Year Grad.	Per Cent.
Tokyo Woman's Special Medical School, Japan	(1919)*	56

* Graduation not verified.

Oklahoma April Reciprocity Report

Dr. James M. Byrum, secretary, Oklahoma Board of Medical Examiners, reports that at the meeting held at Oklahoma City, April 8-9, 1924, 10 candidates were licensed by reciprocity, and one candidate was granted a duplicate license. The following colleges were represented:

LICENSED BY RECIPROCITY			
College		Year Grad.	Reciprocity with
Atlanta School of Medicine		(1913)	Mississippi
University of Louisville	(1891) Texas,	(1921)	Kentucky
University Medical College of Kansas City		(1913)	Missouri
Creighton Medical College		(1910)	Nebraska
University of Oklahoma School of Medicine		(1922)	New York
Memphis Hospital Medical College		(1904)	Tennessee
Vanderbilt University		(1908)	Tennessee
Southwestern Medical University		(1911)	Texas
University of Texas Department of Medicine		(1911)	Texas

Rhode Island April Examination

Dr. Byron U. Richards, secretary, Rhode Island Board of Health, reports the written and practical examination held at Providence, April 3-4, 1924. The examination covered 7 subjects and included 70 questions. An average of 80 per cent. was required to pass. Of the 7 candidates examined, 6 passed and 1 failed. The following colleges were represented:

PASSED			
College		Year Grad.	Per Cent.
Medical School of Maine		(1907)	91
Harvard University	(1922) 84.6,	(1923)	88.9
Tufts College Medical School		(1923)	88.2
Detroit College of Medicine and Surgery		(1915)	87.9
University of Naples, Italy		(1921)*	84.1

FAILED		
College	Year Grad.	Per Cent.
Central Turkey College, Ottoman University	(1917)*	67.5

* Graduation not verified.

Book Notices

THE HUMAN TESTIS. Its Gross Anatomy, Histology, Physiology, Pathology, with Particular Reference to Its Endocrinology, Aberrations of Function and Correlation to Other Endocrines, as Well as the Treatment of Diseases of the Testes and Studies in Testicular Transplantation and the Effects of the Testicular Secretions on the Organism. By Max Thorek, M.D., Surgeon-In-Chief, American Hospital. Cloth. Price, $7.50. Pp. 548, with 308 illustrations. Philadelphia: J. B. Lippincott Company, 1924.

This volume is not a clinical guide in the treatment of diseases of the testis; only a small part of the book is so designed and this part is a fragmentary and sometimes inaccurate compilation of the literature. Most of the volume is devoted to the discussion of the internal secretion of the testis, especially in its relation to masculinity. The author's reading has been extensive and not by proxy; his compilations are accurate; he endeavors, often with success, to maintain the attitude of an impartial critic; and he reports some original work in testis transplantation which is highly creditable. Although he adopts Steinach's other errors, he repudiates the latter's "rejuvenation" fallacy, which term, he says, "must be dropped." Yet to the author the testis is the sole source of maleness, whose "internal secretion gives rise to the secondary sex characters and sexual potency," although the literature teems with proofs of error in this statement. The surgical treatment of the tuberculous testis, a secondary focus, is well described; but the equally important treatment of the remainder of the tuberculous patient is not outlined. According to the author, vasotomy is a method for treating infections not of the vesicles but of the epididymis; epididymotomy was first performed by Hagner and in 1902—both assertions erroneous. The obsolete use of the word "presently" to mean "at present" is confusing; so is "ducti," misused as the plural of "ductus." The book well represents that era in the conception of sex, now happily drawing to a close, which gave rise to the "rejuvenation" and other fallacies; it does not, however, portray the present conception of the origin and maintenance of sex characters. It has been apparently the result of a considerable literary and research experience and represents the only compilation on the subject available in English. No doubt later editions will take account of the newer studies rapidly accumulating in this field.

INTERFACIAL FORCES AND PHENOMENA IN PHYSIOLOGY. Being the Herter Lectures in New York in March, 1922. By Sir William M. Bayliss, M.A., D.Sc., F.R.S., Professor of General Physiology in University College, London. Cloth. Price, $3. Pp. 196, with 7 illustrations. New York: E. P. Dutton and Company.

Biologists are generally agreed that surface phenomena play an important part in life processes; therefore, such a book as this should be of particular interest. Unfortunately, our definite knowledge and the facts available for correlation are decidedly limited, and a discourse on this subject must content itself mainly with the treatment of such processes in which the principles might rather than do apply, with considerable controversy of opinion. We should remember, however, that many of our best recognized laws were once severely denounced as "radical" hypotheses. Bayliss gives a good exposition of elementary and fundamental ideas underlying surface phenomena. He presents a wealth of ideas of how surface phenomena may be important in physiology, and the facts that have been gathered in support of these, displaying a wide and critical grasp of the literature. He also points out in some cases the type of experimentation that might be followed to throw light on some of our debated questions. These are the chief merits of the book. The style is inclined to be discursive, and the book is not at all a source of organized and condensed information. Conflicting theories are freely discussed, and considerable space is devoted to attacking the "chemical" interpretation of "colloidal" reactions, as advanced by Jacques Loeb. Some of the more involved concepts are presented so briefly that one could hardly expect to learn them from the text, if one had not known of them before. The interpretations for some simple and well established facts are incorrect, or at least very superficial. The explanation for the fact that a small soap bubble is under greater pressure than a large one is almost unintelligible, and certainly contains not even a suggestion of the generally accepted kinetic interpretation of the phenomenon. Again, in discussing the effects of freezing of protoplasm, the statment is made that no pure ice separates when a salt solution is cooled rapidly below the eutectic temperature. This statement is incorrect, and only one well versed in the laws of freezing would be able to read between the lines to understand how the author's words really are to be taken. On the whole, the book is well written, and contains some ideas of value to any one interested in surface forces and phenomena in physiology.

GESUNDHEITSWESEN UND WOHLFAHRTSPFLEGE IM DEUTSCHEN REICHE. Ein Ratgeber für Aerzte, Socialhygieniker, Kommunal- und Versicherungsbehörden, Krankenkassen, Wohlfahrtsämter, Gewerkschaften und die öffentlichen und privaten Fürsorgeorgane. Herausgegeben von Prof. Dr. med. Bernh. Möllers, Oberregierungsrat u. Mitglied des Reichsgesundheitsamtes. Mit einem Geleitwort des Präsidenten des Reichsgesundheitsamtes Berlin F. Bumm. Paper. Pp. 713. Berlin: Urban & Schwarzenberg, 1923.

This is a comprehensive treatise of the best German type. It gives an authoritative description of public health organization and public health conditions in Germany with sufficient, but not overpowering, detail. No important aspect of health and welfare work seems to be omitted. The statistical data are brought down to the end of 1922, and furnish a vivid picture of the effect of war on the prevalence of infectious diseases, the flaring up of cholera, typhus and smallpox, and the increase in typhoid and tuberculosis. The existing regulations and practices relating to social insurance, and all the varieties of health and benefit work undertaken by official and volunteer agencies are clearly set forth, making the book an indispensable reference volume for all comparative studies. Paper and typography—the book was printed in Austria—are of good quality.

THE APPLICATION OF THE AIR FORCE PHYSICAL EFFICIENCY TESTS TO MEN AND WOMEN. By Lucy D. Cripps, M.B., D.P.H. Medical Research Council. Special Report Series, No. 84. Paper. Price, 1 shilling, 6 pence net. Pp. 48. London: His Majesty's Stationery Office, 1924.

This is the third publication of material either collected by the Medical Research Council or placed at its disposal for the purposes of an anthropometric survey. The two previous reports dealt with the question whether, by any appropriate treatment of measurements long familiar to physicians and anthropologists, measurements of bodily dimensions and of respiratory capacity, it might be possible to obtain a simple method of assessing physical condition. While not all the data collected by the Council have yet been analyzed, enough have been dealt with to make it probable that this question must be answered in the negative. The present report deals with the same question and also whether less familiar systems of measurements or tests would serve as a rational basis to judge goodness or badness of physique. The tests used to select candidates for the British Royal Air Service, and known as the Group-Captain Flack's tests, were applied to university students, students in physical training colleges, civil servants, and young women engaged in widely different occupations, but they did not result in the discovery of any simple or valid relationships that might be used for this purpose. The general conclusion drawn was that the variations of the respiratory tests, even in a highly selected fit sample of men and women, are so large that the fixation of a normal standard is impossible, even when a reduction of the variations is effected by the use of multiple correlation.

DIE LEHRE VON DEN PUPILLENBEWEGUNGEN. Von Dr. Carl Behr, O. O. Professor der Augenheilkunde an der Hamburgischen Universität. Paper. Price, $3.95. Pp. 225, with 34 illustrations. Berlin: Julius Springer, 1924.

One would scarcely imagine that a book of this size could be written about movements of the pupil, without tiresome reiteration and unessential inconsequential details. But Behr has produced a most readable book, based to a great extent on the observations of others, and interestingly interlarded with personal observations. Unfortunately, the arrangement of the subject matter is not in so logical a sequence as could be desired. The main chapters are on the anatomic basis of

pupillary movements, the physiology of pupillary movements, the pathology of pupillary movements, schematic diagrams of the paths of light reflexes, and methods of examination of the pupil. As the central and the sympathetic nervous systems play such integral parts in activities of the pupil, the neurologic aspect of the matter is necessarily emphasized, and this is done in an understandable manner. Ophthalmic physiologists will naturally disagree with some of the author's conclusions, particularly in regard to the pupillomotor sensitivity of the retina; but, as Strauss remarks, "Chacun à son gout." One extremely important theoretical point dwelt on is that there exists the possibility of a functional difference of individual fibrillae within a single nerve fiber. According to this, a portion of the fibrillae of an axis cylinder of the optic nerve would serve to transmit the visual impulse, while another and the less resistant portion would transmit the pupillomotor impulse. More and more, ophthalmologists are inclining toward this view. The printing and binding of the book are better than is usually found in paper-covered volumes. The text matter is very complete, although a few omissions are noted, such as the epinephrin reaction in dementia praecox. The last sixty-seven pages are devoted to a very complete bibliography, starting in 1840 and extending to the close of 1920.

IN THE SIGHT OF GOD. By Jacob Wendell Clark. With an Introduction by E. C. Dudley. Cloth. Price, $2. Pp. 369. Chicago: Covici-McGee Company, 1924.

This novel has an unusual interest for medical readers for several reasons: first, its author is a physician; second, it has an earnest introduction by Dr. E. C. Dudley, and third, its thesis is the supreme importance of control over human heredity. The scene is chiefly the copper country of northern Michigan. Here a remarkable character, "Staggering Smith," subject to locomotor ataxia, engages in independent researches which lead him to a determination of the mendelian law. Unfortunately, just as he is about to announce his work, he learns that the monk Gregor Mendel had made the same experiments years before. To the home of Staggering Smith comes a young, illegitimate girl, Jane Towerover, whom he trains in his scientific experiments, and who becomes eventually widely known for her own contributions to the field of eugenics. Other characters, such as a half-breed laborer and an adventuring eastern millionaire, complicate the love motive of the book.

Although apparently a first novel, this book by Dr. Clark is written with a style that seldom falls into the literary faults of the amateur. An occasional sentimentality or too lurid description are the only marks of lack of literary experience. The plot of the book, while somewhat complicated and perhaps subject to the charge of "deus ex machina," is nevertheless highly interesting, and the suspense is sufficient to capture the reader's continuous interest.

In a period when novels are written only too often wholly for entertainment, or, as Dr. Dudley puts it, in a period "which abounds in highly colored and misleading pictures of clandestine occasions and in the portrayal of erotic characters whose indiscretions display a reckless disregard of consequences," a book such as this, with a human story and with a well developed social thesis, has much to commend and endorse it.

UEBER EINGEBILDETE SCHWANGERSCHAFTEN. Von Doz. Dr. R. Hofstätter. Paper. Price, 2.25 Swiss francs. Pp. 47. Berlin: Urban & Schwarzenberg, 1924.

Dr. Hofstätter has presented a timely discussion of pseudocyesis from the standpoint of our most recent conception of its etiology—that of a disturbance of the endocrines. The author accepts the premises that, in view of the hypertrophy of the anterior lobe of the hypophysis during pregnancy, with certain physical changes that are quite generally thought to be related to an increased secretion of that structure, pseudocyesis is incident to some hypophysial change—with a coincident dysfunction of the ovarian substance. In other words, the association of increased activity of the hypophysis, with some abnormality of function of the ovary, produces the symptom complex of pregnancy without the existence of pregnancy. We are fully in accord with the author in the general assumption that endocrinology explains much in the etiology of many instances of pseudocyesis—the fact that the thyroid and the suprarenals, for example, offer evidences of hypertrophy in true pregnancy would permit us to credit their increased activity as contributing a share, at least, to the development of the symptoms of a spurious pregnancy. We grant his general assumption, but feel inclined to question the specificity of the factors producing the false pregnancy. Such has not been conclusively proved. We likewise are in hearty accord with Dr. Hofstätter when he maintains that other etiologic factors are involved in certain instances of pseudocyesis. In this connection, he divides the psychologic elements that may be concerned into three groups: (1) paranoia, especially the chronic forms; (2) hysteria, and (3) neuroses and psychoses. In the category of psychic influences he would grant these: (*a*) the woman who has an intense desire for maternity; (*b*) the woman who has knowledge of the appearances of a supposed pregnancy; (*c*) the woman who too attentively looks for early signs of pregnancy and is thereby misled; (*d*) the mental reaction following a false diagnosis by a physician. Under separate captions are brief discussions of fraudulently simulated signs of pregnancy, and imaginary and fraudulent extra-uterine pregnancies. At the close, the author discusses the fact of pseudocyesis in man and animals. The report of eleven personally observed examples of the various types of pseudocyesis are illuminating: the mention of many brief reports of cases culled from the literature are valuable. In conclusion, the four and more pages of bibliography makes the brochure a valuable guide to him who would go further in the study of the subject. The author has contributed a valuable work to the field of obstetrics and forensic medicine.

THE RELATIVE POSITION OF REST OF THE EYES AND THE PROLONGED OCCLUSION TEST. By F. W. Marlow, M.D., M.R.C.S., F.A.C.S., Professor of Ophthalmology in the College of Medicine, Syracuse University. Cloth. Price, $2.50. Pp. 96, with 11 charts. Philadelphia: F. A. Davis Company, 1924.

In the hurly-burly of the twentieth century rush, it is rather refreshing to find that there are 700 persons who were willing to have one eye covered for a week or more without underlying visible inflammation—for that is the prolonged occlusion test that the author used for the purpose of relaxing spasm of the extrinsic ocular muscles, exactly as atropin relaxes a spasm of the ciliary muscle. No matter whether the patient showed orthophoria or heterophoria, whether the patient was hyperopic, myopic or astigmatic, whether the patient was 9 years or 78 years old, if asthenopic symptoms were present, a patch was placed over one eye, and for one solid week or even more the eye was not to be used in conjunction with the other for even a single second. By the end of this time, the extrinsic ocular muscles were supposed to be sufficiently relaxed so that the true muscle balance could be obtained. The word "supposed" is used advisedly, for, throughout the booklet, the phrases "it is believed" and "no doubt" occur in such profusion that a mental question arises as to the proof of many statements of fact or theory. The author has reported an exhaustive and intensive bit of experimental work that does not justify any positive conclusion. An adoption of the prolonged occlusion test, as recommended, is out of the question for the average ophthalmologic practice; and, even in exceptional cases, the use of the test is still of questionable value. Nevertheless, to one who is muscle bound, the book may prove interesting reading.

CHIRURGIE DE L'OREILLE DU NEZ, DU PHARYNX ET DU LARYNX. Par Georges Laurens. Second edition. Cloth. Price, 100 francs net. Pp. 1052, with 792 illustrations. Paris: Masson et Cie, 1924.

Beginning with a consideration of the general questions of anesthesia, radiotherapy and vaccinotherapy, the author takes up surgery of the ear, together with intracranial complications, and then surgery of the nose, with intranasal and external operations. Following this comes the surgery of the nasal accessory sinuses, nasopharynx and pharynx. Surgery of the larynx and trachea and esophagus is considered in considerable detail. Diathermy and electrocoagulation are dealt with in the concluding chapter. Many of the illustrations are original.

Medicolegal

Conspiracy Against Physician—Use of Dictagraph

(Mangum Electric Co. et al. v. Border et al. (Okla.), 222 Pac. R. 1002)

The Supreme Court of Oklahoma says that a petition alleged that the plaintiff was a physician and surgeon and the mayor of a city; that certain of the defendants were the owners of an electric light plant in the city; that the plaintiff as mayor and the city council called an election for the purpose of voting bonds to construct a municipal light plant; that the defendants conspired together for the purpose of injuring the plaintiff in his business and in his reputation, and bringing the plaintiff into disrepute, for the purpose of defeating the bond issue; that the defendants, in carrying out that conspiracy, secured a pregnant woman and sought to induce the plaintiff to produce an abortion, and installed a dictagraph in rooms occupied by the woman in different hotels; that certain of the defendants made certain statements imputing that the plaintiff would commit an abortion; that the plaintiff, being advised of the defendants' acts, caused the arrest of said defendants, and said acts became public, and the plaintiff suffered damages by reason thereof. The court holds that the petition stated a single cause of action for damages against the conspirators, for a malicious wrong; that the overt acts and statements made by the defendants were a part of the conspiracy and part of the overt acts calculated to injure the plaintiff; and that the trial court did not err in overruling the various motions or demurrers to said petition.

The case was tried to a jury, which returned a verdict for the plaintiff for $12,000 for damages to his reputation and character and standing as a physician; $10,000 for mental anguish and pain; $20,000 for actual damages to his business; $20,000 for exemplary damages—a total of $62,000. But the judgment obtained by the plaintiff is reversed, and the cause remanded for a new trial, because the jury was not instructed that if the plaintiff participated in the overt acts, with full knowledge of the conspiracy, or aided and abetted therein, and assisted in the overt acts, he could not recover damages; in other words, because, the defendants having introduced evidence that the plaintiff with full knowledge of the conspiracy, and its plans, employed one of the persons actively engaged therein to aid and assist in carrying out the overt acts relied on as a basis for damages, it was error for the trial court to refuse a requested instruction submitting this defense to the jury.

There was no error in a refusal to give a requested instruction to the effect that, if it was necessary for those engaged in the conspiracy to secure the cooperation of the plaintiff, and without his consent the object of the conspiracy would have failed, or would have been abandoned, then the plaintiff could not prevail in his action to recover damages. That requested instruction was based on the erroneous assumption that the object of the conspiracy was to commit an abortion, whereas the object was to injure the plaintiff in his business and occupation. Nor was it error to refuse to give an instruction that, if the object of the conspiracy was to secure the plaintiff to produce an abortion on a woman who at the time was not pregnant with child, then the conspiracy was an agreement to do an impossible act, and the plaintiff could not recover. It was immaterial whether the woman was pregnant or not. The object of the conspiracy was maliciously to injure the plaintiff in his profession.

The placing of a dictagraph in a room where a physician is expected to visit a patient, when done without just cause or excuse, is wrongful. The fact that parties attempt to secure information by such means has a tendency to reflect on the honor and integrity of the person so shadowed. The natural and ordinary conclusion to be drawn by the general public when informed that a dictagraph is being used to record a conversation between a physician and his patient is that the physician is engaging in some unprofessional or illegal conduct. Where six persons, one of whom is a detective, go to a hotel and register and install a dictagraph, and thereafter go to a hotel in another county and install a dictagraph for the purpose of recording a conversation between a certain physician and his patient, and such facts become known, this, it must be conceded, will subject the physician to public disrepute, ridicule and contempt.

Clonorchiasis as a "Dangerous Contagious Disease"

(Ex parte Liang Buck Chew (U. S.), 296 Fed. R. 182)

The United States District Court, in Massachusetts, in dismissing a petition to secure the release by habeas corpus of a Chinese who was held for deportation because the health officers of the immigration service certified that he was suffering from a "dangerous contagious disease," being found to have clonorchiasis, or flukeworm of the liver, disagrees with the contention that the medical certificate was conclusive on all parties in interest, and that no inquiry was open as to whether it was correct or incorrect, reasonable or unreasonable. The court says that it seems to it that the certificate of a health officer made under the statute stands on the same footing as final decisions of other immigration tribunals, and that it is open to the petitioner to show that the certificate was wholly unwarranted on any reasonable view of the applicant's condition; in other words, was unsupported by any evidence. Clonorchiasis is not directly transmissible from man to man; the parasite that causes it has to pass through two intermediate hosts before becoming capable of infecting another person. It is contracted by human beings, usually and perhaps always, by eating raw or nearly raw fish infested with the parasite. The regulations of the public health service, which declare that the word "contagious" is to be regarded as synonymous with "communicable," include it as a dangerous contagious disease. The underlying intention of the statute is to establish safeguards against the introduction into this country by alien immigrants of dangerous diseases, which might spread and do harm here. Certain diseases of which this would be true—e. g., yellow fever—are not contagious in the strict sense of the word. But they must be within the intended scope of the act. The regulation making "contagious" equivalent to "communicable" seems pretty broad; but, assuming that the regulation be given a reasonable construction, the court is not prepared to say that it is invalid. Even so, there remains a good deal of doubt whether clonorchiasis can reasonably be found to be a dangerous contagious disease in this country. In view of its history and nature, there seems little likelihood of its ever becoming a menace here. It may be that the health officers are overcautious about it; but it seems to the court to be going too far to say that they are unreasonable.

Practicing Without Certificate—Affidavit—Evidence

(Fason v. State (Ala.), 98 So. R. 702)

The Court of Appeals of Alabama says that defendant Fason was prosecuted under Section 7564, Code of 1907, which provides that "any person who treats or offers to treat diseases of human beings in this state by any system of treatment whatsoever, without having obtained a certificate of qualification from the state board of medical examiners, shall be guilty of a misdemeanor," etc. The statute is not directed against any particular system of treatment, but requires that any person treating or offering to treat diseases of human beings by any system of treatment shall first obtain a certificate of qualification from the state board of medical examiners. This statute has been repeatedly upheld as a valid exercise of the police power of the state. One need not be a "medical" doctor, or one who prescribes drugs or medicines for human diseases, in order to be amenable to this statute against practicing medicine without a license. A certificate of qualification from the state board of medical examiners is required before one may hold oneself out to the public to treat diseases of human beings by any system whatsoever. A person practicing chiropractic must have such certificate; and, failing to obtain it, he is guilty of a violation of the law.

The affidavit in this case charged that the defendant "did treat or offer to treat diseases of human beings in this state

by chiropractic system, or some other system, without having first obtained a certificate of qualification from the state board of medical examiners." The affidavit sufficiently charged that the system of treatment used was chiropractic. The affidavit undertook to describe the system of treatment as chiropractic or some other system. It may not be necessary to describe the system of treatment, but it certainly was sufficient to name the system chiropractic. When the alternative "or some other system" was added, these words made the affidavit indefinite and uncertain. While the statute mentions "any system" and the system may not be described, yet when a system is named, and in addition thereto, "or some other system" is averred, it should be named, or the affidavit should aver that it was unknown to the affiant. The affidavit was demurrable for not naming the other system relied on or averring that it was unknown.

The statute under which the defendant was prosecuted makes each treatment a separate offense, and provides that, on conviction, the defendant may be fined for each offense. Each treatment administered without the necessary certificate of qualification constitutes a distinct offense, and the state may be required to elect for which treatment it prosecutes. It may be that evidence of more than one treatment of the same or other persons might be admissible if limited to the purpose of showing the guilty knowledge of the defendant in administering the treatment for which the state elects to prosecute. But this question was not raised in this case, while, in the next sentence, the court says that, if the defendant is charged in the complaint or indictment with practicing medicine without license, evidence of all his treatments of patients as a practitioner of medicine would be admissible.

It was not competent to show that the defendant was paid for the treatment, unless this was shown to be part of the res gestae (essential circumstances) of the treatment.

A witness testified that he was not sick, but had a pain in the neck at the time he went to the defendant for treatment. A treatment for "pain in the neck," or any other physical ailment, is within the meaning of the statute.

Hospital Not Scientific Institution Under Tax Law

(City of Knoxville v. Fort Sanders Hospital (Tenn.), 257 S. W. R. 408)

The Supreme Court of Tennessee says that, following the permission of the state constitution, the legislature exempted from taxation "all property belonging to any religious, charitable, scientific or educational institutions when used exclusively for the purpose for which said institution was created, or is unimproved and yields no income." The defendant corporation denied that its property was subject to taxation. While the case was not free from doubt, the court holds against the defendant's contention, reverses a decree that dismissed the city's bill to recover taxes assessed against the defendant, and renders a decree for the city. The defendant, the court says, had a large hospital building, and in connection with its hospital had a research laboratory and a roentgen-ray outfit, and conducted a school for training nurses. It did some charitable work, some educational work, and some scientific work. Nevertheless, the court does not think that it could be regarded as a charitable, an educational, or a scientific institution, within the sense of the constitution. The great bulk of its business was the operation of a hospital in which patients paid for the services rendered them. That portion of the property devoted to charitable, scientific and educational purposes was not separable from the remainder. It was obvious from the testimony of a physician, who was formerly president of the corporation, that the hospital was erected and maintained as an aid or convenience for the physicians and surgeons who used it in the practice of their profession—as a place to treat their patients and perform their operations. Such a place is commonly found necessary or convenient by physicians and surgeons doing a large practice. Manifestly, the educational and charitable work done at this hospital was incidental, and the court does not think that it could be properly called a scientific institution. While doubtless these physicians pursued their calling in a scientific or skilled manner, still they did not pursue it so much in the interest of science as for their own livelihood.

Society Proceedings

COMING MEETINGS

American Academy of Ophthalmology and Oto-Laryngology, Montreal, Canada, Sept. 15-20. Dr. Luther C. Peter, 1529 Spruce Street, Philadelphia, Secretary.

American Association of Obstetricians, Gynecologists and Abdominal Surgeons, Cleveland, Sept. 18-20. Dr. James E. Davis, 111 Josephine Avenue, Detroit, Secretary.

American Electrotherapeutic Association, New York, Sept. 9-12. Dr. Richard Kovacs, 223 E. 68th Street, New York, Secretary.

Missouri Valley, Medical Society of the, Des Moines, Sept. 17-19. Dr. Charles W. Fassett, 115 E. 31st Street, Kansas City, Mo., Secretary.

North Dakota State Medical Association, Bismarck, Sept. 10-11. Dr. H. J. Rowe, 5211 Upton Avenue, S., Minneapolis, Minn., Secretary.

Wisconsin, State Medical Society of, Green Bay, Aug. 20-22. Mr. J. G. Crownhart, 588 Jefferson Street, Milwaukee, Executive Secretary.

AMERICAN PEDIATRIC SOCIETY

Thirty-Sixth Annual Meeting, held in Pittsfield, Mass., June 5-7, 1924

The President, DR. DAVID MURRAY COWIE, Ann Arbor, Mich., in the Chair

Juvenile Medicine and Its Problems

DR. DAVID MURRAY COWIE, Ann Arbor, Mich.: Juvenile medicine must concern itself with two groups of large scale problems—those in which the public must take an active part and those which must be carried on by the pediatrician himself. Public juvenile medicine concerns itself with those diseases which can be eradicated only by perfect cooperation of the laity with physicians as health teachers. The duties of the juvenile internist are serious and manifold, and because of this his education must be unusually broad; he must be well grounded in many branches of internal medicine that the modern adult internist delegates to some medical specialty. Every effort should be made by institutions of learning to favor in every way possible adequate teaching facilities for the careful handling of the various divisions of juvenile medicine, so that the young graduate who goes into general practice will know without question how to deal with the commoner problems, and the man who wishes to specialize will see the need for greater preparation than he is frequently wont to acquire.

Congenital Syphilis

DR. LEONARD FINDLAY, Glasgow, Scotland: The incidence of congenital syphilis has in many quarters been grossly exaggerated. We in Glasgow erred when we credited 10 per cent. of the infant population with being affected with the disease. In my opinion, the most delicate and reliable test of the presence of congenital syphilis is a positive Wassermann reaction, with the one proviso that the Wassermann reaction in the new-born is no proof that the child is syphilitic. The antibodies, or whatever causes the Wassermann reaction, may pass over from the mother to the infant; but, unless spirochetes are present and fresh antibodies formed, the antibodies which emanated from the mother will gradually be eliminated and the child's serum will react negatively. A child with a negative Wassermann reaction at birth may later develop a positive Wassermann reaction, but this contingency is unlikely. It has been held that purely clinical observers have much underestimated the rôle that syphilis plays in mental deficiency, epilepsy, spastic diplegia and congenital heart disease. My faith in this view has been much shaken.

Postoperative Acidosis in Children

DRS. PHILIP C. JEANS and KENNETH H. TALLERMAN, St. Louis: A study has been made of children with a view to elucidating the causation of postoperative acidosis. The blood and urine before and subsequent to operation were followed, and those substances which might be causative factors were estimated. The data presented demonstrate that the lowering of the alkali reserve is due in but small measure to acetone bodies, or to lactic acid accumulation. Phosphorus retention is obviously not the cause of any acidosis that may exist. In fact, phosphate retention constitutes a compensatory

mechanism, the phosphates of the blood falling with a lowered alkali reserve, and the phosphorus excretion being increased coincidently. The organic acids excreted increase, and in those instances showing a more marked lowering of the blood carbon dioxid, are in excess of both acetone bodies and lactic acid. It is therefore presumed that some as yet unidentified factor is largely responsible for the lowered alkali reserve that is observed. The fall of the carbon dioxid appears to be proportional to the drop in blood pressure. It was observed also that qualitative tests for acetone bodies in the urine gave but a poor indication of the degree of acidosis present, if compared to the variation in the alkali reserve.

DISCUSSION

DR. JAMES L. GAMBLE, Boston: In using the Van Slyke and Palmer method for measuring by direct titration the total organic acid excretion, there are at least two conditions in the urine which will cause an enormously large measurement, namely, the presence of albumin or of bicarbonate. We have found that the bicarbonate is not dependably removed by the calcium hydrate which is meant to precipitate the phosphates and carbonates. Urine of the usual acidity, however, does not contain an appreciable amount of bicarbonate. Error due to it would be encountered only in urines more alkaline than p_H 7.0. I would not imply, however, that either of these causes or error was present in Dr. Jeans' material.

DR. K. D. BLACKFAN, Boston: Dr. Talbot and Dr. Jeans have indicated the reason for the excellent results from the administration of glucose in infants and children who show grave manifestations of acidosis. The need of giving a great deal of water to children suffering from acidosis has not been sufficiently emphasized. At times, a small child cannot take sufficient water orally to influence the condition favorably. Therefore, I believe that water should be introduced parenterally—intravenously or intraperitoneally. The subcutaneous injection of physiologic sodium chlorid solution, followed by the injection of concentrated glucose solution, results in the very rapid absorption of water. Water should be introduced in very large amounts so that it can be absorbed as rapidly as possible in order to overcome these unknown acids which play an important part in the production of hypoglycemia.

DR. PHILIP C. JEANS, St. Louis: None of these urines contained albumin; one or two of them were neutral; most of them were acid.

Clinical Studies of Some Diseases of the Blood in Children

DR. J. P. CROZER GRIFFITH, Philadelphia: In a well known pediatric textbook of recent issue, the statement is made that chlorosis almost never occurs in young children, and in an equally estimable work on medicine it is said that it occurs among young females, and is rare under 12 years of age. Naturally, an early age prevents the appearance or at least the recognition of any of the general symptoms described as characteristic of this disease, but so far as the blood picture is concerned the condition which certain infants and young children exhibit cannot be distinguished from that on which the diagnosis of the disease in adults is based. This form of anemia is particularly susceptible to the good effect from the administration of iron, and a rapid improvement in the hemoglobin content of the blood can be expected as in the chlorosis of adults. The anemias of infancy and early childhood present a kaleidoscopic picture, such changes in the blood picture from one time to another, that it is very difficult to make a diagnosis. It is very necessary to have the differential count, and even a differential count often leaves one in doubt if one depends on that alone.

Clinical Value of Routine Examination of Blood Smears in Diagnosis of Pertussis

DR. HENRY HEIMAN, New York: In a study of 300 cases of whooping cough and whooping cough suspects, the test was based only on a relative lymphocytosis. No total white counts were done to determine the leukocytosis present. A blood smear was taken in each case and stained with Jenner's dye. One hundred white cells were counted. Small and large lymphocytes were grouped together. With a suggestive cough and lymphocytosis, we feel justified in making a tentative diagnosis of pertussis and recommending isolation early in the disease.

DISCUSSION

DR. CHARLES HERRMAN, New York: A simple test for whooping cough that can be carried out in an outpatient department or in a physician's office is needed. Other diseases, such as influenza, do not show the leukocytosis or the relative lymphocytosis found in pertussis. If a young infant has been exposed to whooping cough, the case should be treated as one of whooping cough. All patients suspected of having whooping cough should be isolated completely.

DR. ROWLAND G. FREEMAN, New York: We have been using this test for years, but I think a negative leukocytosis early in the disease does not mean that the affection is not whooping cough. In the paroxysmal stage, patients usually show a leukocytosis.

DR. DAVID MURRAY COWIE, Ann Arbor, Mich.: We have used this test for a long time and feel that it is of great value; but we do not depend on one or two examinations. When we find a child with a cough, we make the differential count and the total leukocyte count, and follow the differential count through. There is a typical course followed by the leukocytosis. During the catarrhal stage there is an increase to 35 or 40 per cent.; then, as the paroxysms come on it goes up to 50, 60 or 70 per cent. The full use of the test is in the control of patients in the hospital. If a patient gives a record of having had a paroxysmal cough within two weeks of the time of admission, he is not admitted to the ward if he has a leukocytosis up to 10,000 and a lymphocytosis higher than normal.

DR. FRITZ B. TALBOT, Boston: My experience has been something like that of Dr. Freeman. I have had a number of differential counts made and have been unable to tell whether the case was one of whooping cough or not. Usually when the blood changes are present, the clinical diagnosis can be made also.

Effect of Pregnancy on Course of Scurvy in Guinea-Pigs

DR. HENRY J. GERSTENBERGER, DR. WILLIAM M. CHAMPION and DONALDA S. SMITH, Cleveland: Pregnancy modifies the picture of scurvy in guinea-pigs, first, by postponing the development of its supposedly characteristic active symptoms and, secondly, by lessening their severity. There is no appreciable difference to be made out between the pregnant scorbutic guinea-pigs that fed themselves on greens during pregnancy up to the time of being placed on a proscorbutic diet and the pregnant scorbutic guinea-pigs that received 5 c.c. of orange juice daily. This is an adequate, but not an excessive, supply of antiscorbutic material. It seems probable from our experience that pregnancy does not stimulate the guinea-pig to ingest an excessive amount of antiscorbutic substance, and, likewise, that in all probability the pregnant guinea-pig does not store the antiscorbutic material in larger quantities than the nonpregnant animal. It was observed that there was a rapid decline to death after pregnancy ended. This speaks against the presence in the body of the mother pig of a large storage of antiscorbutic vitamin. It is strange that these animals should present a relatively mild picture of scurvy and still die, on the average, within the same space of time as do the nonpregnant pigs that develop what is accepted to be a severe type of scurvy. There is a growing feeling that the advanced and active stages of scurvy are to a large degree secondary symptoms produced by bacterial activity made possible by a state of dysergy in the animal organism as a result of a deficiency of water-soluble vitamin C in the diet. It is suggested that probably the change in the picture of scurvy in pregnant guinea-pigs is due to the changed metabolic conditions produced by pregnancy, which either raise the resistance of the animal to infections or enable it to economize in the use of the antiscorbutic vitamin.

Medical Treatment of Hydrocephalus

DR. W. MCKIM MARRIOTT, St. Louis: In certain cases of nephritis with edema there are present in the blood certain substances that lower surface tension. In cases of edema and

ascites, when some substance is given that raises the surface tension, the course of the fluid is reversed. Theobromin sodiosalicylate has a marked effect in increasing the surface tension when given by mouth. The idea suggested itself that in the communicating type of hydrocephalus, when the condition is due to diminished absorption of cerebrospinal fluid, absorption might be promoted by altering the surface tension of the blood. Acting on this hypothesis, theobromin sodiosalicylate was administered by mouth to patients with the communicating type of hydrocephalus. The dosage was 0.2 gm., three times a day, continued over a considerable period of time. In several cases there was a decrease in the circumference of the head; but when the drug was stopped for a time there was again an increase in the head measurement; when the use of the drug was resumed, a decrease in the circumference of the head was again recorded. This method is worthy of trial, since it is innocuous and likely to result beneficially. Furthermore, in certain of these cases there is a tendency to spontaneous recovery, and if the patients can be carried along for a certain length of time they may eventually make a good recovery.

DISCUSSION

DR. K. D. BLACKFAN, Boston: It has been my belief that if children, particularly those with the communicating type of hydrocephalus, were operated on early enough, before there was enlargement of the ventricles and thinning of the cortex, the results might be better. This seems to me to be the rational method of attacking this problem. Dr. Marriott mentions that the medicinal agents used heretofore have been successful only in the communicating type, and this is the type in which we most frequently see spontaneous recoveries. I have seen a number of cases of spontaneous recovery. It seems to me that a better criterion as to the progress of the hydrocephalus than measuring the circumference of the head would be to measure the thickness of the cortex.

DR. HENRY J. GERSTENBERGER, Cleveland: I have given theobromin sodiosalicylate to two children, aged 3 and 6 years, respectively. The first of these children was thought to have a mild form of idiocy due probably to a birth injury. More spinal fluid was produced than was normal. Since receiving theobromin sodiosalicylate, the child has become much more docile and seems to be improving. The second child was thought to have a tumor or an early stage of meningitis. The administration of theobromin sodiosalicylate resulted in improvement. This experience has led me to wonder whether in cases other than hydrocephalus this treatment might not be of value.

DR. A. D. BLACKADER, Montreal: Ordinarily we regard theobromin as an irritating element and as disturbing to the stomach. Since this drug is a distinct diuretic, is the loss of fluid in hydrocephalus due to diuresis and has the loss of fluid in the urine any influence on the loss of hydrocephalus fluid?

DR. W. MCKIM MARRIOTT, St. Louis: As a result of recent work, we have come to doubt whether the effect of theobromin is on the kidneys at all; we have also begun to doubt whether edema is the result of kidney retention, and we question whether it may not be the result of an alteration in the equilibrium of the surface tension and whether theobromin sodiosalicylate does not exert its effect by restoring the equilibrium.

Functional Diastolic Murmurs in Aortic Area, and Pistol Shot Sounds in Groins in Infancy and Childhood

DR. JOHN LOVETT MORSE, Boston: This functional murmur, which is heard not very infrequently in association with severe anemias in infancy and early childhood, is not only audible in the aortic area, but is transmitted in the same way as is the murmur of organic aortic insufficiency. It may or may not be associated with enlargement of the heart. If the anemia is marked, it is likely to be accompanied by a Corrigan pulse, with high pulse pressure and a double murmur in the groins. It must be inorganic, because it diminishes and finally disappears with improvement in and recovery from the anemia. It is not probable that the murmur is due directly to the anemia; i. e., to some change in the blood itself. It is presumably simply one of the manifestations of the lowered muscular and nervous tone, produced by the anemia and due to a relative insufficiency of the aorta from dilatation. A pistol shot sound in the groin is relatively common in moderate and severe cases of anemia in early life, being more common in infancy than later. It is usually associated with an increase in the pulse pressure and occasionally with a double murmur—Durozier's sign. These manifestations are not evidences of a lesion at the aortic orifice, although they are sometimes accompanied by a diastolic murmur in the aortic area. Proof of this statement lies in the fact that they vary with the intensity of the anemia, and disappear entirely when the anemia is cured. They are presumably due to lowered vasomotor tone, which is, in turn, caused by the anemia; they are not infrequently heard in other conditions in childhood that are accompanied by lowered vasomotor tone, such as pneumonia and typhoid fever. The only importance of these physical signs is that they are sometimes thought to be evidences of organic disease at the aortic orifice and, consequently, the cause of mistakes in both diagnosis and prognosis.

DISCUSSION

DR. C. G. GRULEE, Chicago: A point that might be made is that there are certain types of anemia which are likely to be accompanied by many of these phenomena, such as the type commonly called aplastic anemia. In that type of case in which there is fever and the anemia is still advancing, it might be advisable to have a blood culture made. It has not been my experience, however, with the few cases of aplastic anemia that I have seen, to find a blood infection.

Encephalitis as a Sequel of Scarlet Fever

DR. SAMUEL S. ADAMS, Washington, D. C.: An 8 year old boy had an attack of scarlet fever, which progressed favorably until the third week. At this time he complained of headache and inability to see out of the right eye. There were occasional convulsive movements followed by deep sleep. There was no swelling of the eyelids or other evidence of kidney disease. The pupils were dilated and reacted to light; there was no strabismus or nystagmus. There was slight weakness of the left angle of the mouth. The reflexes were normal; there was no Kernig sign and no rigidity of the neck. There was a very moderate amount of albumin, blood and casts in the urine. The spinal fluid was clear. The leukocytes numbered 11,200. The ophthalmoscopic examination showed considerable congestion of the eyegrounds; there was no squint. Four weeks from the time of admission, the urine had increased in amount; the eyes were still slightly congested, but better than at the previous examination. The ophthalmologist reported that signs of disease had disappeared. This case is unusual because the toxic element of the scarlet fever expended itself in an unusual manner.

Scurvy in a Young Child from an Extraordinary Dietary Regimen

DR. J. MILTON MILLER, Atlantic City, N. J.: Medical aid was sought because of the child's inability to walk and tenderness in the legs, the condition having been noted for two or three weeks. There was a history of a similar disability six months previously. The symptoms were typical of scurvy. The child consumed 3½ pints of commercially pasteurized Grade B milk daily, by bottle, never by glass; in addition she ate ice cream once, often twice daily, crackers, cake, muffins, hot cakes with syrup and candy, and on rare occasions a meat broth or soup, made without vegetables, which she disliked. A proper dietary soon corrected the condition. Through the weakness and indulgence of her parents, the child had been permitted to follow her own inclinations in regard to food. That the symptoms were so late in developing may possibly be attributed to the fact that in the brief periods when the child would partake of small quantities of rational food, she stored up sufficient vitamins to prevent outstanding symptoms of scurvy, although latent symptoms may have been present.

(To be continued)

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

68: 425-657 (May) 1924

Effect of Light and Heat on Phosphate Excretion. O. Barkus and F. C. Balderrey, Perrysburg, N. Y.—p. 425.
Physicochemical Studies on Bioluminescence. V. S. Kanda, Tsuyazaki, Japan.—p. 435.
*Blood Volume Regulation. A. Chanutin, A. H. Smith and L. B. Mendel, New Haven, Conn.—p. 444.
*Suprarenal Enlargement Under Heavy Insulin Dosage. O. Riddle, H. E. Honeywell and W. S. Fisher, Cold Spring Harbor, N. Y.—p. 461.
*Chemical Changes in Blood During Fasting and Refeeding. I. S. Morgulis and A. C. Edwards, Omaha.—p. 477.
Studies of Brain Stem. VIII. Diuresis and Anhydremia After Destruction of Thalamus. F. T. Rogers, Dallas, Texas.—p. 499.
Id. IX. Relation of Cerebral Puncture Hyperthermia to Associated Anhydremia. F. T. Rogers, Dallas, Tex.—p. 507.
Weight of Suprarenals During Pregnancy and Lactation. J. C. Donaldson, Pittsburgh.—p. 517.
*Glomerular Filtration. H. L. White, St. Louis.—p. 523.
*Absorption of Insulin by Rectum. S. Peskind, J. M. Rogoff and G. N. Stewart, Cleveland.—p. 530.
*Blood Sugar and Hemoglobin Concentrations After Intravenous Glucose Injections. E. C. Albritton, Columbus.—p. 543.
*Physiology of Reproduction in Birds. XIX. Function of Thymus. O. Riddle, Cold Spring Harbor, N. Y.—p. 557.
*Cardiovascular Reaction to Hemorrhage and Transfusion in Man. J. A. E. Eyster and W. S. Middleton, Madison, Wis.—p. 581.
Mechanism of Change in Resistance of Erythrocytes to Hypotonic Salt Solution. III. W. Ashby, Rochester, Minn.—p. 585.
Id. IV. W. Ashby, Rochester, Minn.—p. 611.
*Conditions of Activity in Endocrine Glands. XII. Changes in Metabolism After Suprarenal Stimulation. M. A. McIver and E. M. Bright, Boston.—p. 622.
Colloid Chemistry of Protoplasm. III. Viscosity of Protoplasm at Various Temperatures. L. V. Heilbrunn, Ann Arbor, Mich.—p. 645.

Blood Volume Regulation.—Chanutin, Smith and Mendel have found that the activity of the kidney is not essential for the immediate regulation of the blood volume after the intravenous injection of saline, since restoration of the volume is effected before the injected fluid leaves the body through the urine. There must, therefore, be a temporary reservoir in the body for taking care of fluid. Muscle and liver do not act as depots for appreciable volumes of the fluid introduced.

Suprarenal Enlargement Caused by Insulin.—The fact that normal pigeons survive disproportionately large injections of insulin has been further confirmed by Riddle, Honeywell and Fisher. The administration of single heavy doses of insulin, or of repeated less heavy dosage, usually results in suprarenal enlargement which is measurable by weighing. Some evidence was obtained indicating that repeated heavy insulin dosage is followed within a few days by a lessened capacity of this insulin dosage to maintain the blood sugar at a low level during the usual length of time. Such dosage is also often followed within six hours by abnormally high sugar levels. It seems probable that the time of appearance of the most striking of these irregularities is approximately the time at which enlargement of the suprarenals is demonstrable. Among the animals studied it was mainly those with largest suprarenals which either died or showed most pronounced effects after administration of large amounts of insulin. The data obtained are in harmony with the view that such insulin administration is accompanied by an increased production of adrenin. To the extent that data obtained on the bird are applicable to the human, these results supply an additional reason for avoidance of heavy insulin dosage in man.

Changes in Blood During Fasting.—In this first paper, Morgulis and Edwards present the results of their study dealing principally with the nonprotein nitrogenous constituents of the blood, supplemented, however, with additional data on the sugar, chlorids and total solids.

Glomerular Filtration.—Glomerular filtration in the mammalian kidney is not yet proved although the presumptive evidence in its favor is very strong. White has been able to demonstrate that the pressure in the frog's glomerular capillaries exceeds the osmotic pressure exhibited by the plasma colloids, which, he considers strong evidence in favor of the view that filtration occurs.

Absorption of Insulin by Rectum.—Experiments made by Peskind, Rogoff and Stewart showed that insulin injected per rectum into rabbits along with blood, serum or water is absorbed and elicits the characteristic effect on the blood sugar content. The effect is rapidly produced, although it may not be as durable as with subcutaneous injection. Larger doses are also necessary as a rule. Injected in physiologic sodium chlorid solution, it does not cause any significant change in the blood sugar, and especially no hypoglycemia.

Blood Sugar Curves Elevated by Intravenous Injection of Glucose.—Experiments made by Albritton in which a constant rate of intake of sugar into the blood was maintained for two and one-half hours by intravenous injection at the rate of 0.7 gm. of glucose per kilogram, per hour, in dogs, yielded blood sugar curves that remained elevated during the injection period. During such continuous injection hemoglobin percentage changes indicate that dilution of the blood occurs, most marked in the first portion of the experiment, but not sufficient essentially to affect the course of the curve. The factors of rate of disappearance and rate of intake are discussed as determining the course of the alimentary blood sugar curve.

Function of Thymus in Reproduction.—A prolonged study, made by Riddle, of the etiology of several types of reproductive abnormalities in pigeons has resulted in the isolation of one type of disorder which is readily corrected by the oral administration of ox thymus. The data obtained seem to demonstrate the presence in the thymus of a substance having a highly specific action on the oviduct of birds—and presumably, of all vertebrate animals which secrete egg envelopes. The substance is indispensable to the production of normal egg envelopes. It is apparently of the nature of a true hormone. To characterize it with reference to its place of origin and the principal point of its action the name thymovidin is suggested. Though not necessary to life, thymovidin seems to be essential to the perpetuation of those vertebrate species whose eggs are protected by egg envelopes.

Cardiovascular Reaction to Hemorrhage.—Eyster and Middleton assert that hemorrhage and transfusion of blood in man, in amounts within 1 per cent. of the body weight, result in only transitory alterations of cardiac size and blood pressures. Compensatory mechanisms cause a rapid readjustment to normal circulatory conditions notwithstanding the altered blood volume.

Suprarenalectomy Causes Fall in Metabolism.—The experiments made by McIver and Bright were all carried out under urethane anesthesia. Urethane acts as a stimulant to the suprarenals, probably by its effect on the central nervous system. Removal of these glands under urethane anesthesia results in a fall of metabolism. Direct splanchnic or reflex stimulation of suprarenal secretion results in a prompt increase of metabolism averaging in these experiments 20.2 per cent. According to the evidence obtained, adrenin does not require the cooperation of the thyroid in producing an increased metabolism.

American Journal of Public Health, Detroit

14: 467-560 (June) 1924

Training of Laboratory Workers. W. H. Park and C. Krumweide, New York.—p. 471.
Training for Sanitarian of Environment. A. Wolman.—p. 472.
Vital Statistics in Public Health Training. I. S. Falk, Chicago.—p. 474.
Education of Public Health Nurse; Demands of Field. A. L. Tittman, New York.—p. 476.
Social Service Training. H. Folks, New York.—p. 479.
Training for Health Education and Publicity. E. G. and M. S. Routzahn.—p. 480.
Engineer in Public Health Work. W. L. Stevenson, Harrisburg, Pa.—p. 487.
Kahn Precipitation Test for Syphilis. R. L. Kahn, Lansing, Mich.—p. 498.
Id. C. C. Young, Lansing, Mich.—p. 508.
Rural Health Commissioner. W. H. Pickett, Great Falls, Mont.—p. 510.

Archives of Occupational Therapy, Baltimore

3: 169-254 (June) 1924

*Work for Tuberculous During and After Cure. II. T. B. Kidner, New York.—p. 169.
Occupational Therapy Department of Jewish Home for Consumptives. L. Lewis.—p. 195.
Suggestion a Factor in Mental Disease. G. E. Clark, Towson, Md.—p. 199.
Occupational Therapy for General Practitioner. W. R. Dunton, Jr., Towson, Md.—p. 205.
Application of Occupational Therapy to Chronic Medical Cases. J. R. Darnall, U. S. Army.—p. 211.
Occupational Therapy for Neuropsychiatric Cases. S. L. Chappell, U. S. Army.—p. 213.

Employment of Tuberculous.—The problem of the employment of the tuberculous after the cure is many sided and exceedingly complex. Kidner finds that no one solution is possible, and no formula for general application can yet be devised. The present status of the question in the United States is presented, including the enunciation of a few principles which seem generally accepted and an indication of the directions in which it is believed that opportunities for employment should be sought, together with some suggestions as to the methods to be adopted.

Archives of Surgery, Chicago

9: 1-236 (July) 1924

*Exsanguination-Transfusion in Treatment of Severe Toxemias. L. B. Robertson, Toronto.—p. 1.
*Hepatitis Following Cholecystogastrostomy. E. P. Lehman, St. Louis.—p. 17.
*Ligation of Pulmonary Artery of One Lung With and Without Resection of Phrenic Nerve. K. Schlaepfer, New Haven, Conn.—p. 25.
Generalized Cisternal Arachnoiditis: Surgical Treatment and End-Results. G. Horrax, Boston.—p. 95.
Renal Malformation and Renal Disease. C. H. Jameson, Rockland, Me.—p. 113.
*Treatment of Spastic Paralysis. C. E. Dowman and M. Hoke, Atlanta, Ga.—p. 145.
*Bladder Sensibility. T. D. Moore, Rochester, Minn.—p. 176.
*Regeneration of Vas Deferens. H. C. Rolnick, Chicago.—p. 188.
Multiple Primary Cancers. L. Herly, New York.—p. 204.
*Bone Growth in Transplanted Bone. L. W. Ely, San Francisco.—p. 215.
Enterocyst of Ileum Causing Obstruction. P. W. Ascher, New York.—p. 226.

Exsanguination-Transfusion for Toxemias.—The method advanced by Robertson for the treatment of toxemias was suggested during the war. The subject was investigated experimentally. These experiments gave very encouraging results. Clinically, however, it was recognized that in profound toxemias the employment of blood letting followed by blood transfusion was often ineffective owing to the relatively small proportion of the total quantity of blood removed and replaced. As experience with the method increased it was recognized that the more complete the replacement of the patient's blood with fresh blood, the more "dramatic" is the effect on the toxemia, and the more likely it is to be permanent. The principle of the operation is to withdraw blood from the median basilic vein of the donor or donors into 100 c.c. glass syringes, each of which contains 10 c.c. of freshly prepared 3.5 per cent. sodium citrate solution. A quantity equal, at least, to the total circulation of the patient is thus obtained. In estimating the amount required it is considered that the quantity of blood in any patient's circulation is roughly 35 c.c. per pound of body weight. The cannula for the transfusion is first tied into a suitable vein, such as the internal saphenous at the ankle, or the median basilic at the elbow, and salt solution is slowly introduced to prevent clotting. The exsanguination cannula is then inserted. In small infants, the superior longitudinal sinus is made use of for the exsanguination, but in children in whom the anterior fontanel is closed the femoral vein provides a suitable substitute. Blood is withdrawn from the patient until signs of exsanguination begin. The amount which can be drawn from small children varies from 60 c.c. to 160 c.c. With the first sign of weakening pulse, one of the 100 c.c. syringes containing citrated blood from the donors is connected with the transfusion cannula, and the introduction of fresh blood is commenced. After transfusion has begun, the withdrawal and the introduction of blood are carried on simultaneously at approximately the same rate until all the available blood has been transfused. The beneficial effect of this procedure in certain profound toxemias and septicemias has been demonstrated clinically on a great many occasions. In cases of severe superficial burns, in which the symptoms indicate a probably fatal result, exsanguination-transfusion has reduced the mortality from 100 to 50 per cent. In erysipelas of the new-born, the mortality has been reduced from nearly 100 per cent. to 50 per cent., and in patients from 1 month to 12 months of age, it has been reduced from 50 to 13 per cent. In acute septic scarlet fever, the method seems to be of decided value in tiding the patient over the period of intense toxemia as well as in converting the case into one of the ordinary type. In acute intestinal intoxication, the procedure has reduced the mortality by from 20 to 25 per cent. The results in septicemia are, on the whole, somewhat disappointing. Although, in some, the response to treatment was most dramatic, in others, the benefit seemed to be slight and temporary. Especially was this the case in staphylococcus infection and in endocarditis.

Hepatitis Following Cholecystogastrostomy.—Lehman reports his experimental experience with an attempt to devise a method of sidetraking the bile with the end in view of avoiding ultimate liver infection. Cholecystogastrostomy, with double ligation and division of the common duct, was performed on twelve dogs. Prior to the anastomosis, the gallbladder was dissected from its liver attachment. The same operation was performed on eight dogs. In addition a flap of the falciform ligament containing fat was wrapped about the gallbladder. In all but two dogs this was a free transplant. Double ligation and division of the common duct was accomplished on eighteen dogs. The cystic duct was then anastomosed to the stomach. One fact is obvious, namely, that communication between the stomach and the lumen of the gallbladder or cystic duct is associated with infection of the liver. No variation of the mechanical plan of the operation has prevented hepatitis. Implanting the cystic duct into the stomach is surgically possible, although attended experimentally by a high mortality. It may prove of value in experimental studies.

Ligation of Pulmonary Artery.—Ligation of the pulmonary artery combined with resection of the phrenic was in all of Schlaepfer's experiments in harmony with the statements of previous experimenters and of clinicians. The operation is without any noticeable shock. The one intact lung takes up the whole respiratory function and expands by pushing the mediastinum with the heart toward the operated side. With the gradual elevation of the paralyzed diaphragm, the ligated diseased side is compressed more and more, the secondary contraction of the fibrosing organ being thereby facilitated. Schlaepfer believes that in any case of unilateral chronic inflammation of the lung, with evidence of a certain general resistance as manifested by fibrous tissue formation around the foci of infection, ligation of the pulmonary artery combined with resection of the phrenic nerve is very promising. This procedure, by putting the lung to a permanent rest by direct action, induces a beneficial fibrosis whereby the foci of infection are permanently controlled.

Treatment of Spastic Paralysis.—Dowman and Hoke report their experiences with 132 cases of infantile cerebral paralysis. In selecting cases for operative treatment, only those cases which belong to the pyramidal tract group were found to be suitable subjects. The patients selected for treatment should have a minimum intellectual age of 4 years. Three important features must be borne in mind: the relaxation of certain groups of muscles by means of neurectomy, the correction of fixed deformities and unstable feet by means of orthopedic operations, and the use of physical training in teaching the child to walk after these operative measures have been employed. Eighteen cases have been treated in this manner and the results obtained seem to justify the opinion that this combination of methods of treatment is essential if the spastic child be given the maximum amount of useful function.

Estimating Bladder Sensibility.—It is sometimes difficult or impossible to state whether urinary retention in a given case is due to a questionable obstruction or dependent on a disturbed nervous mechanism. The study of the bladder sensibility, in Moore's opinion, yields information of definite value

in the differential diagnosis of these conditions. A technic is suggested by which, clinically, the sensibility of the bladder may be studied more accurately.

Regeneration of Vas Deferens.—The results gained by Rolnick in his experiments emphasize (1) the regenerative powers of the vas and its ability to resist trauma and restore continuity of its lumen; (2) the importance of the sheath of the vas, acting as a splint and making a path for epithelization, and (3) possibility of restoration of lumen, which is enhanced, when the deferential vessels are not injured, for they also act as a splint aside from supplying blood to the vas.

Bone Formation in Transplanted Bone.—Ely states that when a piece of bone is removed, and is immediately buried in the soft tissues of the animal from which it has been taken, the bone and its contained marrow die. About a week afterward, vascularization of the bone marrow begins, and shortly thereafter, bone formation.

Atlantic Medical Journal, Harrisburg, Pa.

27: 551-618 (June) 1924

Thrombosis of Cavernous Sinus. G. E. de Schweinitz, Philadelphia.—p. 551.
Etiology and Diagnosis of Lateral Sinus Thrombosis. S. M. Smith, Philadelphia.—p. 555.
Treatment of Lateral and Cavernous Sinus Thrombosis. E. W. Day, Pittsburgh.—p. 560.
Gradenigo Symptom Complex. W. B. Chamberlain, Cleveland.—p. 566.
Five Years of Fracture Work; Open Reductions. H. E. McGuire, Pittsburgh.—p. 573.
Common Parasitic Diseases of Skin in Childhood. F. C. Knowles, Philadelphia.—p. 578.
*Proper Diet in Nephritis. R. R. Snowden, Pittsburgh.—p. 580.
Responsibilities of Surgeon. J. B. Deaver, Philadelphia.—p. 583.

Diet in Nephritis.—Snowden reviews the functions of the kidney, pointing out that they must be considered in prescribing diet in nephritis. The functional capacity as regards the nitrogen group can be determined by the phenolsulphonephthalein test; clinically, retention of waste nitrogen causes headache, drowsiness or coma, high blood pressure and gastro-intestinal disturbances. The functional capacity as regards acids, if sufficiently lowered to cause retention, gives rise to shortness of breath. If there is impairment in the ability to excrete either water or salt, edema will promptly develop. With this clinical knowledge and a few simple tests to draw on, the physician can determine renal functional activity, as regards the various groups of waste products, with sufficient accuracy to use in prescribing a rational diet. In each case of nephritis, the physician must first determine which groups of waste products are being excreted with difficulty. With this as a basis, a diet is outlined that will reduce to the minimum those waste products which are difficult of excretion. In brief, meats and cereals leave acid residues, whereas fresh fruits and vegetables, including potatoes, leave basic residues. To help relieve the strain on the kidneys and to guard against acidosis, the patients should take liberally of oranges, lemons, peaches, canteloup, beans, potatoes and fresh vegetables. Where there is difficulty in the elimination of salt and water, edema quickly becomes evident. In such case the diet should be as nearly salt free as possible. A total chlorid intake as low as 5 gm. in twenty-four hours is obtained only by scrupulous care, all food being specially cooked salt free. However, such a small amount of salt can usually be eliminated by the kidneys even though the functional capacity for salt is markedly reduced. When there is difficulty of excretion of salt, water is also retained; and when there is difficulty of excretion of water, salt is retained. Hence, no matter which is the primary factor, the clinical picture is the same and the dietary measures are identical. The salt intake is reduced to the lowest possible point and water intake also is restricted to 1,000 c.c. or less.

California and Western Medicine, San Francisco

22: 249-306 (June) 1924

Doctor, as He Was, Is and Should Be. T. C. Edwards, Salinas.—p. 249.
Surgery and Radiotherapy in Treatment of Malignant Diseases. R. Duncan, Los Angeles.—p. 256.
*Chronic Arthritis in Relation to Industrial Accident Cases. L. W. Ely, San Francisco.—p. 260.
Errors in Diagnosis of Abdominal Conditions. W. Wessels, Los Angeles.—p. 262.
Use of Opium After Laparotomies. A. W. Collins, San Francisco.—p. 264.
Care of New-Born by Obstetrician. A. J. Scott, Jr., Los Angeles.—p. 267.
Narcisse Joseph Martinache, Ophthalmologist. D. W. Montgomery, San Francisco.—p. 271.
*Carbon Dioxid Combining Power of Blood Plasma in Pulmonary Tuberculosis. F. P. Miller, Los Angeles.—p. 273.
Bone Tumors. H. Snure, Los Angeles.—p. 276.

Trauma, Fracture and Arthritis.—Ely says that bone can be injured in one way only, and that is by fracture. It cannot be strained, sprained or suffer contusion. Trauma either fractures a bone or leaves it uninjured. In the absence of a fracture, bone can be attacked only by a disease of its contained marrow. There is one important aspect of the great second type of arthritis in its relation to industrial accident work, as well as to other surgical work, that has not received the attention it deserves, namely, its relation to intra-articular fractures. To it are probably due the stiffness, pain and restriction of motion following intra-articular fractures in elderly persons, and the only rational explanation for this fact is that the fracture set free into the joint the infectious material previously locked up with the bone.

Carbon Dioxid Combining Power of Blood Plasma in Tuberculosis.—Forty-one determinations were made by Miller on thirty-six individuals. Thirty-three of these were patients and three were nurses, used as controls. In the far advanced cases, eighteen determinations were made, with an average carbon dioxid range of 61.3. Thirteen moderately advanced cases showed a general average of 64.4. Early cases, of which there were four, produced an average of 57.6. Ambulatory cases, of which there were four, showed 63.4 as an average. The average for controls was 66.3 or very slightly above that for patients. The carbon dioxid findings and their relation to temperature of 100 F., or above, for six cases produced an average of 63.5. In twenty-six cases below 100 F., the average was 61.7. In the ambulatory cases, no appreciable difference was noted in the finding, with the usual breakfast or upon the fast. From the foregoing results, no depletion of the blood alkali was evident. Miller failed to find any evidence of acidosis, even in cases fast approaching exitus. Two cases were examined from fourteen to eighteen days prior to death, and in each case the determinations did not even approach the lower limits of normal. In all these cases the urine was examined for total acidity, and their was usually an increase of from 50 to 100 per cent. above normal.

Canadian Medical Association Journal, Montreal

14: 469-572 (June) 1924

Effects of Temperature on Blood and Circulation. J. Meakins.—p. 469.
Use of Immune Serums. H. B. Cushing.—p. 477.
Lead Neuropathy. A. H. Gordon.—p. 479.
*Influence of Infection on Reaction of Diabetic to Insulin Treatment. I. M. Rabinowitch.—p. 481.
Problem of Right Iliac Fossa. F. N. G. Starr.—p. 483.
Appendectomy. E. H. Wood.—p. 487.
Modern Therapy of Syphilis. H. C. Mersereau.—p. 489.
Prophylaxis in Obstetrics; Prenatal Care. J. N. Nathanson.—p. 494.
*Case of Galactorrhea. A. T. Cameron, H. J. Ferrier and P. H. T. Thorlakson.—p. 498.
Conservatism in Treatment of Chronic Accessory Nasal Sinus Disease. F. A. Macneil.—p. 501.
Fixed Principles in Feeding of Infants. F. M. Fry.—p. 503.
Community Psychosis. H. O. McDiarmid.—p. 506.
Child Guidance Clinics. G. S. Mundie.—p. 508.
*Use of Phenoltetrachlorphthalein as Test of Liver Function. O. C. Trainor.—p. 511.
Case of Thrombo-Angiitis Obliterans. A. Malloch.—p. 516.
Mixed Cell Sarcoma of Kidney in Child Eleven Months Old. F. M. Fry.—p. 518.
Hydrocephalus Complicating Intracranial Hemorrhage in New-Born Infant. S. G. Ross.—p. 519.
Vitamins. H. E. MacDermot.—p. 521.

Influence of Infection on Reaction to Insulin.—Rabinowitch records the types of "blood sugar time curves" obtained from patients suffering from diabetes mellitus, complicated by gangrene and infection, which demonstrate the influence of the latter on the reaction of such individuals to insulin treatment. These "blood sugar time curves" presented one phenomenon in common, namely, the absence of the characteristic rapid onset and steep nature of the fall of the blood sugar. Various types of curves have been noted. In isolated instances with septicemia and severe acidosis only the slightest changes

were noted in spite of the enormous doses of insulin (100 units) administered. Though in the greatest number of cases the slow response to insulin was associated with fever, such a reaction was noted in the absence of fever, but in the presence of suppuration. In twenty-six such cases, including gangrene, carbuncle, abscess, etc., there were only four deaths. Sixteen patients were eventually able to do without insulin, dietary restriction alone sufficing. These patients, apparently, prior to the complication, were mild diabetics, the pancreatic function being suddenly deranged by infection. The object of recording these data is to demonstrate that in the presence of infection no routine course can be followed in establishing the dose of insulin. Enormous doses may be required. The amount and frequency of administration during the emergency period is best determined by the frequent (hourly if necessary) estimation of the blood sugar.

Galactorrhea.—The case cited by Cameron et al. presents a number of marked differences from DeLee's and Berkeley's descriptions. The milk resembled a thick cream, though it was of problematical nutritive value. Both breasts were affected, and both showed marked signs of activity. There was no evidence of any abscess formation nor chronic inflammation in either breast. Return of menstruation was not accompanied by cessation of flow. Roentgen-ray treatment gave immediate results.

Phenoltetrachlorphthalein Test of Liver Function.—The series of twelve cases reported by Trainor, while not conclusive evidence of the reliability of the phenoltetrachlorphthalein test of liver function, serve to show the possibilities of the method in a variety of liver conditions.

Journal of Experimental Medicine, Baltimore

39: 777-974 (June) 1924

*Phenomena Encountered in Attempting to Transmit Varicella to Rabbits. T. M. Rivers and W. S. Tillett, New York.—p. 777.
Transmission and Treatment of Infectious Ophthalmia of Cattle. F. S. Jones and R. B. Little, Princeton, N. J.—p. 803.
Viability of Hemolytic Streptococcus in Certain Solutions Containing Gelatin. F. L. Meleney and Z.-D. Zau, Peking, China.—p. 811.
*Histologic Study of Central Nervous System in Experimental Botulinus Poisoning. E. V. Cowdry and F. M. Nicholson, New York.—p. 827.
Epidemiology of Rabbit Respiratory Infection. I. L. T. Webster, New York.—p. 837.
Id. II. Snuffles. L. T. Webster, New York.—p. 843.
Id. III. Nasal Flora of Laboratory Rabbits. L. T. Webster, New York.—p. 857.
Microbic Virulence and Host Susceptibility in Paratyphoid-Enteritidis Infection of White Mice. IV. Effect of Selective Breeding on Host Resistance. L. T. Webster, New York.—p. 879.
Concentration of Plasma Proteins in Nephritis. G. C. Linder, C. Lundsgaard and D. D. Van Slyke, New York.—p. 887.
Changes in Volume of Plasma and Absolute Amount of Plasma Proteins in Nephritis. G. C. Linder, C. Lundsgaard, D. D. Van Slyke and E. Stillman, New York.—p. 921.
Fat Metabolism in Nephritis. A. Hiller, G. C. Linder, C. Lundsgaard and D. D. Van Slyke, New York.—p. 931.

Experimental Varicella.—A description of the intradermal method of inoculation and the results of the experimental work facilitated by its use is given by Rivers and Tillett. It gave more reliable results than those obtained by smearing the virus on the scarified skin. Study of the immunologic reactions failed to bring any evidence that the virus under investigation bears an etiologic relationship to varicella.

Brain Lesions in Botulinus Poisoning.—Cowdry and Nicholson believe that the results of their observations indicate that, except for a slight degree of vascular engorgement, all the lesions noted in the brains of mice, guinea-pigs and rabbits suffering from botulinus poisoning are readily susceptible of some explanation other than that they are produced by the direct action of the toxin on the central nervous system. Their observations tend to show that, on the histologic side, there is no evidence inconsistent with the results of physiologic experiments indicating that the site of action of the toxin is on peripheral nerve terminals.

Military Surgeon, Washington, D. C.

54: 641-768 (June) 1924

United States Naval Medical School. C. S. Butler and W. M. Kerr.—p. 641.
Pathology of Phosgene and Mustard Poisoning. A. R. Koontz.—p. 663.
British Military Convalescent Hospitals. W. J. R. Rainsford.—p. 677.
American Relief Administration in Russia. F. H. Foucar.—p. 680.
Function of Sanitation Division of Office of Surgeon General. G. C. Dunham.—p. 699.
Army Medical Museum. J. F. Coupal.—p. 705.
Mental Phase of Pulmonary Tuberculosis. G. H. Crofton.—p. 708.
Batalion Dispensary Equipment. J. P. Fletcher.—p. 715.

Minnesota Medicine, St. Paul

7: 405-464 (June) 1924

Problems in Relation to Hard of Hearing. H. Newhart, Minneapolis.—p. 405.
*Germanium Dioxid in Secondary Anemia. J. D. Garvin, Rochester, Minn.—p. 409.
Postoperative Massive Collapse of Lungs. F. J. Hirschboeck, Duluth, Minn.—p. 414.
Chronic Nephrosis. L. G. Rigler and A. Rypins, Minneapolis.—p. 419.
Psychoneuroses. E. J. Engberg, St. Paul.—p. 424.
Congenital Syphilis of Nervous System; Juvenile Tabes in Twins. F. Whitmore, St. Paul.—p. 430.
*Rupture of Kidney. F. G. Watson, Worthington, Minn.—p. 436.
Midwife Situation in Minnesota. E. C. Hartley and R. E. Boynton, Minneapolis.—p. 439.
*Acute Osteomyelitis of Mandible. H. E. Hullsiek, St. Paul.—p. 446.

Germanium Dioxid in Secondary Anemia.—Nineteen patients have been treated in the Mayo clinic with germanium dioxid for varying periods of time, most of them for the anemia of chronic nephritis, or of chronic infectious arthritis. A marked effect was noted in only two—one case of chronic nephritis and one of chronic infectious arthritis. Germanium dioxid in either acid or alkaline solution, in cation or anion form, given hypodermically in doses of from 12 to 20 mg., or by mouth in doses of from 10 to 100 mg., every one to four days, over periods ranging from one to five weeks, produced practically no increase in the number of erythrocytes, nor any appreciable rise in the hemoglobin content of the blood.

Traumatic Rupture of Kidney.—A boy, aged 8, fell from a hay-loft and struck his abdomen on the top of the manger. When first seen his condition was good. On examination there was found a pronounced abdominal rigidity, with general tenderness and distention. He complained a great deal of pain, especially in the right lower quadrant of the abdomen. The leukocyte count was 15,000. Urinary findings were negative. A diagnosis of traumatic appendicitis was made and operation was advised. A high right rectus incision was made. No free fluid was found in the abdomen, but there was a large subperitoneal mass under the liver appearing like a hematoma or an abscess. The appendix was postcecal and adherent to the posterior peritoneal wall over the region of the tumor mass which was about the level of the right kidney. It was removed. A trochar was inserted in the mass but no fluid escaped. On inserting the finger through the peritoneum it was found to be a dense clot and in this area a large portion of kidney tissue was found unattached. A rubber tube drain was inserted and the abdomen closed in the usual manner. The following day his dressing was found to be saturated with urine. On the seventh day, ascertaining by a phthalein test that the left kidney was functioning, a nephrectomy was done. The boy had a very stormy convalescence, but left the hospital on the twenty-sixth day.

Acute Osteomyelitis of Mandible.—Hullsiek's patient received a blow on the chin, causing a slight abrasion. He picked this abrasion with his finger nail. The next day he had a small red spot on his chin, and the following day this was tender and swollen. The submental glands became swollen and tender. He grew progressively worse and the swelling extended. On cleaning out his mouth pus was seen exuding from one of the tooth sockets on the right side. A pocket was found which extended along the entire right side of the mandible. About 2 ounces of pus was evacuated with free drainage following this procedure. In the ensuing ten days several more such cavities were found and opened inside the mouth. Additional incisions were made to get better drainage. His condition improved slowly. Five months after bony sequestra were still being discharged.

New Jersey Medical Society Journal, Orange

21: 179-210 (June) 1924

Upper Abdominal Disease. D. B. Pfieffer, Philadelphia.—p. 179.
Digitalis as Stimulant. L. F. Bishop, New York.—p. 183.
Treatment of Infectious and Toxic Neuralgia, Neuritis and Allied Conditions. P. A. D'Acierno, West Hoboken.—p. 185.
Injuries of Eye. W. E. Chase, Passaic.—p. 189.
Orthopedic Causes, Lower Back Pain. B. W. Moffat, New York.—p. 194.

Northwest Medicine, Seattle

23: 255-302 (June) 1924

*Surgical Use for Insulin. I. B. Bartle, North Bend, Ore.—p. 255.
Roentgen-Ray Treatment of Tonsillar and Associated Lymphoid Tissue. C. A. Rutherford, Seattle.—p. 258.
Present Status of Roentgen-Ray Therapy for Diseased Tonsils. O. M. Rott, Spokane.—p. 260.
Conservative Prostatectomy. J. C. O'Day, Honolulu, Hawaii.—p. 262.
Postoperative Intestinal Obstruction. F. S. Sure, Colfax, Wash.—p. 266.
Diaphragmatic Hernia. Case. M. E. Steinberg and F. B. Patterson, Portland.—p. 269.
*Epidemic Encephalitis Treated with Mercurochrome. Two Cases. J. W. Visher, Twin Falls, Idaho.—p. 271.
Pernicious Anemia of Fourteen Years' Duration. W. C. Speidel and C. C. Goss, Seattle.—p. 277.
Periarterial Sympathectomy. A. O. Loe, Seattle.—p. 283.

Insulin in Chronic Furunculosis.—People who have chronic furunculosis with a high blood sugar, even though there is no sugar in the urine, are treated with insulin by Bartle on the basis that they are potential diabetics. Strict regulation of the diet and in many cases the administration of insulin in proper doses has been universally successful in Bartle's experience. It is his routine practice in surgery, when infective cases are not progressing as they should, to make the blood examination. In many of these cases there is an excess of blood sugar. When this is properly corrected, the patient begins to show improvement.

Mercurochrome in Epidemic Encephalitis.—In both of these cases Visher gave 10 c.c. of 1 per cent. solution of mercurochrome intravenously for the first dose, and in one case 8 c.c. for a second dose. Very prompt improvement followed. There was no unfavorable reaction. Freshly distilled water was used in making the solution, and the rate of injection was very slow, at least three minutes being taken.

Porto Rico Medical Association Bulletin, San Juan

18: 3-20 (June) 1924

*Presence of Ancylostoma Duodenale in Porto Rico. R. B. Hill and W. C. Earle.—p. 6.
Microchemical Study of the Blood. R. del Valle Sárraga.—p. 7.

Ancylostoma in Porto Rico.—*Ancylostoma* was found by Hill and Earle in sixteen of sixty-four patients examined. The average number of *Ancylostoma* found was slightly over four per person. In these same individuals the average number of all hookworms expelled was 419 per person.

Surgery, Gynecology and Obstetrics, Chicago

38: 723-856 (June) 1924

*Operation for Carcinoma of Rectum. R. C. Coffey, Portland, Ore.—p. 723.
Recurrent Dislocation of Shoulder. W. R. MacAusland, Boston.—p. 739.
*Extrapleural Thoracoplasty in Bronchiectasis. C. A. Hedblom, Rochester, Minn.—p. 747.
*Adenomyoma of Rectovaginal Septum. M. T. Goldstine and S. J. Fogelson, Chicago.—p. 753.
*Granuloma Inguinae. S. S. Schochet, Chicago.—p. 759.
*Congenital Cystic Kidney in New-Born. H. A. Singer and J. Brams, Chicago.—p. 768.
Pressure Hour-Glass Stomach: Natural and Experimental Production; Case Reports. R. A. Rendich, Brooklyn, and J. F. Connors, New York.—p. 771.
Gumma of Thyroid: Two Cases. C. Williams and B. Steinberg, Richmond, Va.—p. 781.
Giant Cell Tumor of Bone. J. C. Bloodgood, Baltimore.—p. 784.
*Papillary Epithelioma of Kidney Pelvis. E. E. Angle, New York.—p. 790.
*Endocrine Disturbances and Nonunion of Fractures. A. Kolodny, Chicago.—p. 793.
Breast Hypertrophy. E. I. Bartlett, San Francisco.—p. 798.
*Local Anesthesia in Operations on Neck. W. R. Meeker and H. W. Hundling, Rochester, Minn.—p. 807.
Radium Treatment of Carcinoma of Antrum. F. M. Johnson, New York.—p. 819.
Splint for Fracture of Humerus. C. R. Steinke, Akron, Ohio.—p. 823.
Modification of Estlander's Operation for Lip Defect. E. D. Twyman, Kansas City, Mo.—p. 824.
Universal Case for Surgical Dressings. G. B. Arana, Buenos Aires, Argentina.—p. 826.
*New Method for Rhinoplasty. O. Ivanissevich, Buenos Aires, Argentina.—p. 828.
Paravertebral Anesthesia in Kidney Surgery. G. Kolischer, A. E. Jones and O. G. Schnetzer, Chicago.—p. 830.

Operation for Carcinoma of Rectum.—Coffey again describes his technic of operation in these cases, which has been used in forty-seven cases with two deaths. Final report is withheld but is said to be favorable. Coffey states that cancer of the rectum, instead of being one of the most hopeless of cancers, must now be considered one of the most hopeful, and particularly if routine examinations of the rectum are made and the diagnosis is made early.

Extrapleural Thoracoplasty in Bronchiectasis.—The operation which Hedblom performs in these cases consists of the subperiosteal resection of the whole length of the third or fourth to the eleventh ribs, inclusive, in six stages under combined local, nerve block, and gas or oxygen anesthesia. The object of the resection is to secure permanent collapse of the diseased portion of the lung. The ribs are resected periosteally because by so doing there is less risk of penetrating into the pleural cavity. A posterior resection is performed first because it produces the greatest relative amount of collapse of the chest wall and because it affords access to the proximal portion of the intercostal nerves. These nerves are injected with 95 per cent. alcohol, which produces an anesthesia which lasts for many weeks.

Adenomyoma of Rectovaginal Septum.—Four cases are reported by Goldstine and Fogelson. In all of these cases there was definite evidence of inflammation. These growths are not only interesting from an etiologic and histologic standpoint but are of marked clinical significance. Their removal has relieved many distressing symptoms. The authors favor Meyer's theory that these growths are of inflammatory origin.

Granuloma Inguinale.—Schochet reports the first case of granuloma inguinale from Chicago. Sixty-six cases have been recorded from the United States. Schochet urges that a careful study of all ulcerations about the genitals be made for Donovan bodies, especially in those cases in which syphilis and tuberculosis have been eliminated.

Congenital Cystic Kidney in New-Born.—Singer and Brams report the case of a dry labor followed by the birth of a fetus which was normal except for cystic kidneys. The microscopic examination of the kidney tissue and the chemical examination of the cyst contents tend to corroborate the theory of defective development in utero as the cause of this disease. The age of the infant, the absence of other anomalies, the fact that there was no dystocia, and the presence of urea, uric acid, creatinin and chlorids in the cyst contents are added points of interest.

Papillary Epithelioma of Kidney Pelvis.—Angle's patient had had hematuria for two years. It was the only symptom. The physical examination was negative, but the urologic investigation gave a clear-cut picture. The right kidney was doing most of the work of purifying the blood. Phthalein appeared in five minutes on the right and 8 per cent. was excreted, while on the left, it appeared only after twelve minutes and 1 per cent. was excreted. In addition to these facts the pyelogram showed a filling defect in the pelvis of the kidney.

Endocrine Dysfunction Causes Nonunion of Fractures.—Believing that nonunion of fractures is not always a result of an exclusively limited local disturbance, Kolodny carried out experimental investigations on the probable influence of endocrine disturbance. He states that the results of his experiments prove beyond any reasonable doubt that endocrine disturbances play a prominent rôle in the suppression of regenerative processes of bone, but not all cases of delayed union or nonunion of fractures are to be attributed to endocrine disturbances.

Local Anesthesia in Neck Operations.—Meeker and Hundling contend that the practical value of local anesthesia is not the same in all parts of the body; it is especially suitable for operations on the neck. Block of the cervical plexus by the posterior route is employed in cervical laminectomy as part of the procedure in craniotomy for cerebellar explorations, and occasionally when there are contraindications to the employment of the lateral routes. Of the two lateral routes the oblique is preferable because of the greater anatomical safety. Block of the cervical plexus by the lateral oblique method is valuable, either alone or combined with infiltration, in operations on the lateral and anterior regions of the neck. Operations which may be satisfactorily performed under local anesthesia include thyroidectomy, laryngectomy, thyrotomy, and removal of tumors, excision of

esophageal diverticula, removal of lymphatic glands, excision of branchial cysts, tracheotomy, ligation of thyroid or carotid vessels and cervical laminectomy. For the excision of furuncles and carbuncles, extensive degenerating glands of the neck, and widely disseminated carcinomatous glands, general anesthesia methods should be employed. Details of procedures employed are given.

Using Ear for Rhinoplasty.—The nasal plastic operation devised by Ivanissevich consists in excising a sector of the helix of the external ear, grafting it temporarily into the ball of the thumb and, finally, suturing it to the nose.

Wisconsin Medical Journal, Milwaukee

23: 1-68 (June) 1924

Hematuria. G. Timberlake, Baltimore.—p. 1.
*Cardiovascular Symptoms and Signs of Early Hyperthyroidism. J. A. E. Eyster, Madison.—p. 7.
Constitutional Psychopathy as Background for Hysteria. Wauwatosa.—p. 13.
Intracranial Hemorrhage in New-Born. G. F. Kelly, Milwaukee.—p. 16.
Treatment of Fractures About Wrist Joint. R. M. Carter, Green Bay.—p. 19.
Management of Occipitoposterior Positions. C. S. Harper, Madison.—p. 23.
Newer Aspects of Hay-Fever Problem: Preventive Treatment. A. R. Hollender, Chicago.—p. 27.

Cardiovascular Symptoms of Early Hyperthyroidism.—Eyster is always on the lookout for early hyperthyroidism in patients presenting themselves for examination because of cardiovascular symptoms. Every case of suspected chronic heart disease should be considered first in this light. This is especially important in the so-called goiter regions. The special ocular and other tests require only a few minutes. The proper interpretation of a systolic murmur may first appear when the case is thus classified. It would still seem to be necessary to emphasize that a systolic murmur not only does not always but usually does not mean organic heart disease.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 945-988 (May 31) 1924

Practical Value of Slit Lamp. T. H. Butler.—p. 945.
*Alcohol and Life Duration. R. Pearl.—p. 948.
Etiology of Plague. W. G. Liston.—p. 950.
Schick Test and Toxin-Antitoxin Injections for Diphtheria. C. L. Pattison.—p. 954.
Acute Puerperal Complete Inversion of Uterus: Replacement: Recovery. I. S. Fox.—p. 955.
Perineal Prostatectomy. D. MacLeod.—p. 955.
Unilateral Optic Neuritis Associated with Follicular Tonsillitis and Articular Rheumatism. L. W. Bradshaw.—p. 956.
Postmortem Crying. H. C. C. Veitch.—p. 956.
Exostosis of Sacrum Preventing Delivery. A. McMurray.—p. 956.

Alcohol and Life Duration.—The material analyzed by Pearl, as a whole, is normal from an actuarial viewpoint. It is, in respect to mortality, an extremely good sample of the general population of the United States. At every age from 30 to 100, inclusive, the persons in the "all moderate" class of drinkers, whether males or females, have a somewhat higher expectation of life than the persons in the "abstainer" class of the same age. Male persons in the "all heavy" class have a markedly lower expectation of life at all ages from 30 to 100, inclusive, than male persons in the "all moderate" class; and a markedly lower expectation of life than persons in the "abstainer" class up to and including age 60. From age 60 on the expectation of life is somewhat, though not greatly, higher in the "all heavy" class than in the "abstainer" class. This result may possibly be due to a selective effect of the very high mortality in the heavy drinking group prior to age 60. In the case of the females, the expectation of life is markedly lower for the persons in the "all heavy" group than for persons in either the "abstainer" or the "all moderate" group, at all ages from 30 to 100, inclusive. The "moderate steady" class, which is from certain points of view the most important one, shows consistently the highest expectation of life at all ages from 30 to 100, inclusive, in the case of the females; and also in the males, except that after 70 the "all moderate" male group has very slightly higher expectations than the "moderate steady" male group. These conclusions are drawn from what is believed to be demonstrably the most critically adequate material, considering both quality and quantity, which has ever been available for the study of the problem of the influence of alcohol on the duration of human life.

1: 989-1036 (June 7) 1924

*Goiter. R. McCarrison.—p. 989.
*Aneurysm of Basilar Artery Simulating Opium Poisoning. S. Smith.—p. 994.
*Gallstones Associated with Anomaly or Injury of Bile Ducts. E. R. Flint.—p. 995.
*Abscess of Brain that Pointed Externally. H. Drummond.—p. 995.
Two Cases of Ankylosis of Left Temporomandibular Joint. P. T. Crymble.—p. 996.
Epidemiology of Plague. W. G. Liston.—p. 997.
Value of Trephining. W. Stansfield.—p. 1001.
Charcot's Disease of Interphalangeal Joint. S. A. Grant.—p. 1002.
Traumatic Rupture of Lung. W. A. Rees.—p. 1002.

Simple Goiter.—McCarrison limits his discussion to one form of thyroid enlargement—the simple goiter. He stresses the frequency of its occurrence and the need for adopting appropriate preventive measures. His views on this subject are well known.

Aneurysm of Basilar Artery Simulating Opium Poisoning.—Smith relates the case of a man who suddenly became ill, while at work, with headache, vomiting and rigors. Within two hours he became insensible; the pupils were strongly contracted; respiration was 54; the blood pressure was 134 systolic and 80 diastolic, and the deep reflexes were lost. The case was diagnosed as one of opium poisoning, and he was treated for this without effect. The coma gradually deepened, the temperature rose to 103 F. and death occurred on the fourth day after the first symptom. On dissection the organs were found in a healthy normal state, except the base of the brain, where there was a fusiform aneurysm of the basilar artery filled with a nonorganized clot. It was situated along the middle line of the medulla and pons with a slight convexity to the right of the middle line, and with tail and head slightly to the left. The expanded head was lying in a depression which it had made in the anterior extremity of the pons; the rest of the sac slightly indented the pons and medulla.

Anomalies of Bile Duct.—The first two cases cited by Flint are examples of two anomalies of the bile ducts. The third case is one of injury to the common duct. In the first case a tightly distended gallbladder contained a stone as large as a hazelnut, wedged into the commencement of the cystic duct. The common duct was free from stones. Also there was an accessory bile duct from the right end of the portal fissure to a common opening with the cystic duct into the common bile duct. In the second case there were two ducts, the cystic duct running parallel to, and opening into, the main duct just above the ampulla. The third patient had had a cholecystectomy and choledochotomy done in 1915. In 1920 she began to have short attacks of severe pain in the upper abdomen, going through to the center of the back and accompanied by shivering, rise of temperature and jaundice. Between the attacks the jaundice entirely disappeared. The attacks gradually became more frequent and persisted longer until the last attack, which never settled. The old scar was excised, and after separating many adhesions the common duct was found to be very much dilated, and a small stone was felt in the ampulla. There was a stricture in the common duct about 0.5 cm. above the level of the duodenum, through which it was impossible to pass the finest needle. The dilated upper part of the duct was at least six times larger than the lower end, and after excising the stricture and tying the upper end of the lower segment, the dilated upper end was anastomosed to the duodenum.

Abscess of Brain "Points" Externally.—The case reported by Drummond is of interest chiefly because it shows that a cerebral abscess may, like other collections of pus, point externally; also it illustrates the fact that changes in the fundus oculi may be absent even in the presence of conditions best calculated to favor their development and when they would be most valuable.

Journal of Tropical Medicine and Hygiene, London

27: 109-120 (May 15) 1924

*Schistosoma Japonicum: Diagnosis of Early and Mild Infections. A. H. Skinner.—p. 109.

Action of Poison of Viper and Cobra on Caterpillar of Galleria Mellonella. S. Mazza.—p. 109.

Early Diagnosis of Schistosomiasis.—The most important feature in Skinner's cases was the liver tenderness, and he believes that this, taken with the blood picture and the type of temperature, should be enough to settle the diagnosis, if search of the fecal mucus fails to demonstrate the characteristic eggs or any signs of parasites of other intestinal infections.

Lancet, London

1: 1091-1140 (May 31) 1924

*Prevention and Treatment of Puerperal Sepsis. B. Whitehouse.—p. 1091.

*Severe Gastric and Duodenal Hemorrhage. A. F. Hurst.—p. 1095.

Inorganic Constituents of Blood in Pathologic Conditions. O. L. V. de Wesselow.—p. 1099.

*Schick Test. C. B. Ker and J. McGarrity.—p. 1101.

*Treatment of Symptoms in Inoperable Cancer with Liquor Potassae. D. M. Gall.—p. 1104.

Apparatus for Supporting Jaw During Anesthesia. E. H. P. Cave.—p. 1112.

Treatment of Puerperal Sepsis.—Whitehouse applies the following measures in the general treatment of a septicemic patient: (*a*) serum therapy; (*b*) autogenous vaccines; (*c*) intravenous "acriflavin" with (*d*) a concentrated and nutritious diet, and a liberal allowance of alcohol. Antistreptococcic serum is given intravenously, in large doses with an equal quantity of physiologic sodium chlorid solution. The initial dose is 50 c.c. of serum with 50 c.c. physiologic sodium chlorid solution and 1 c.c. of serum from a freshly killed guinea-pig. The latter is added in order to introduce complement as suggested by Murray. On each of the two following days, 30 c.c. of serum is given with an equal amount of physiologic sodium chlorid solution, the injection on each ocasion being administered very slowly. Autogenous vaccines are used in conjunction with other measures, but Whitehouse does not rely on vaccine therapy only in a severe case of puerperal systemic infection. Acriflavin in a strength of 1:250 in physiologic sodium chlorid solution is given intravenously in doses of 20 c.c. morning and evening. In a few instances the daily injections have been continued for over a fortnight until the patient's skin has assumed a lemon tint. One patient was treated solely by this method and made an excellent recovery, although the infection originally appeared to be of a very virulent type. Whitehouse's closing statement is: "It is far better to prevent puerperal fever than to attempt its cure."

Treatment of Gastric and Duodenal Ulcer.—Neither the occurrence of hemorrhage in the past, nor the danger of hemorrhage in the future, in a patient with an ulcer which has not previously bled, Hurst believes, can be regarded as in any way pointing to the desirability of surgical rather than medical treatment for a chronic ulcer. In his opinion the only definite indications for surgery are hour-glass contraction and pyloric obstruction, neither of which should ever occur if the diagnosis is made as early as it should be, the treatment is sufficiently strenuous and prolonged, all septic foci are thoroughly eradicated and proper after-treatment is instituted.

Shick Test.—From the study of their results, Ker and McGarrity have come to the conclusion that the Schick test might be omitted so far as children under school age are concerned. Such a high proportion of these give positive reactions that it would be reasonable to proceed with immunization at once. In older children, up to the age of 10 years, it seems unnecessary to make use of the control test. It is highly desirable to simplify the procedure in every way so that as few injections as possible have to be made. If it is possible to arrange for two readings of the reaction these are best made on the fourth and tenth days. If one reading only is practicable the eighth day appears suitable, and the first immunizing dose can be given at the same visit.

Treatment of Inoperable Cancer with Liquor Potassae.—Not a cure but improvement has been noted by Gall under the administration of potassium in this form: liquor potassae, 15 minims; potassium nitrate, 10 grains; aqua menthae piperitae, to one-half ounce. Of this mixture one-half dram is given three times daily. The results generally, and the almost startling relief after the first dose of liquor potassae, have led Gall to consider whether there may not be some specific effect of potassium on cancer growths. It has been shown that "the potassium content of the red corpuscles of cancerous patients is approximately double that of healthy persons," and "chemical analysis of 300 tumors showed preponderance of potash salts and nucleoprotein content, associated with high virulence and rapid development." The question arises whether potassium is a natural agent used by the body to control the perverted metabolism of tumor cells, and if so, whether its administration is not indicated in these cases.

1: 1141-1194 (June 7) 1924

Spread of Infectious Disease. S. F. Dudley.—p. 1141.

Heliotherapy in Pulmonary Tuberculosis. B. Hudson and L. Hill.—p. 1147.

*Morbid Anatomy and Pathology of Sprue. P. Manson-Bahr.—p. 1148.

Tendency of New-Born to Jaundice. A. D. Fordyce and W. G. McAfee.—p. 1151.

*Surgical Tuberculosis in Egypt. R. V. Dolbey and A. W. Mooro.—p. 1153.

*Vaccine Treatment of Ozena. K. Sakagami, Tokyo, Japan.—p. 1155.

*Treatment of Epidemic Encephalitis. E. Matthew.—p. 1156.

Anoscope and Syringe for "Injection Treatment" of Hemorrhoids P. K. Murphy.—p. 1162.

Morbid Anatomy of Sprue.—Manson-Bahr relates two rapidly fatal cases of sprue in which he made necropsies. The essential anatomic lesion in sprue appears to be an ulceration of the small intestine, which, if it continues long enough, leads to the complete atrophy of the villi, such as is observed in the chronic stage of the disease, and one may surmise that the aphthous ulcers which commonly occur in the mouth and on the tongue in sprue are part of the same pathologic process.

Tuberculosis in Egypt.—An analysis of 2,500 cases is reported on by Dolbey and Mooro. Tuberculosis, both surgical and pulmonary, is on the increase in Egypt. The type and incidence of surgical tuberculosis in the flat bones, rather than in the classical long bones and joints, suggest a recrudescence of the disease in a community that has lost its acquired immunity. The study of predynastic, dynastic and ptolemaic bones, extending to a period as far back as 3000 B. C., proves that surgical tuberculosis was a disease of frequent incidence in those times. It also suggests that the type of disease affecting the flat bones developed when periods of urban civilizations succeeded periods of almost purely agricultural life in Egypt. Maceration and softening of mummified tissues, which have been successful in demonstrating certain infective organisms in predynastic bodies, have not enabled them to demonstrate the tubercle bacillus. The meat and milk supply of the poor in Egypt is obtained almost entirely from nontuberculous sources such as the buffalo and goat, which are relatively immune to the tubercle bacillus. Avian tuberculosis is probably a contributing cause of the incidence and development of this disease among the poor in Egypt.

Vaccine Treatment of Ozena.—The vaccine treatment of ozena has been applied by Sakagami in more than seventy instances since 1919. Some of the patients failed to continue the injections for the requisite period; in other cases the records are incomplete, so that only thirty cases remain. Most ozena patients suffer from a mixed infection by the coccobacillus and gram-positive mucus producing bacilli; therefore, the application of mixed vaccines derived from these two kinds of bacteria appears reasonable. Injection of coccobacillus vaccine and mixed vaccines is the most reasonable treatment for ozena. Ozena patients generally show a decreased number of red and white corpuscles, and this condition does not change after vaccine treatment. In animal experiments, likewise, the red and white corpuscles of the rabbit immunized against coccobacillus show a considerable decrease.

Magnesium Sulphate in Epidemic Encephalitis.—Intramuscular injections of magnesium sulphate have been given by Matthew in cases of epidemic encephalitis. A 25 per cent. solution of magnesium sulphate is used and 4 c.c. is given at each injection. The second dose is given twelve hours after the first, and the third and subsequent doses, if required, are given at twenty-four hour intervals.

Archives des Maladies de l'App. Digestif, Paris

14: 293-388 (April) 1924

Parasitic Disease of Digestive Tract. P. Le Noir and R. Deschiens.—p. 293.
*Metastases of Gastric Cancer. Loeper and R. Turpin.—p. 299.
*Dye Excretion Through Stomach. D. Simici and C. Dumitriu.—p. 310.
*Spontaneous Pseudocysts of Pancreas. D. Denéchau and C. Gigon.—p. 318.
Chronic Diarrhea. R. Savignac.—p. 335.
Treatment of Dilatation of Esophagus. Gaston-Durand.—p. 355.

Skin and Suprarenal Metastases in Cancer of Stomach.—Loeper and Turpin recall that a metastatic epithelioma in the skin occurs once in over 2,000 cases, and most of these cases are secondary to a gastric cancer. They describe a case of epithelioma of the stomach with fourteen metastatic nodules in the skin, one the size of a mandarin orange. No changes were noted in the lymphatic glands. Necropsy showed four metastatic nodules in the suprarenal capsules. Most of the nodules had developed in connective tissue and had been transmitted by the blood vessels.

Gastric Excretion of Dyes.—Simici and Dumitriu tested the excretion of eight dyes through the stomach in thirty-eight healthy men. A dose of 5 cg. of the dyes was administered twice or three times by intramuscular injection. Their experiments proved that only neutral red, rhodamin and methylene blue were thus excreted, the excretion beginning after from ten to forty-five minutes and persisting from three to twenty-seven hours. The dye test may be of great diagnostic value, as it has been established that the gastric excretion occurs exclusively by way of the glands. In an atrophic gastritis the excretion will be delayed or prevented. This test might also help to differentiate an organic from an inorganic lesion. Thus the diagnosis of gastric ulcer may be made on account of the more profuse elimination of the stain with ulcer than in other cases of hyperacidity.

Spontaneous Pseudocysts in Pancreas.—Denéchau and Gigon report two cases of these cysts. They emphasize that the diagnosis is difficult, but the clinical history and radioscopy are of help. Three phases occur in these cases, the first with an intolerable pain in the epigastrium, vomiting, arrested passage of intestinal contents and flatus. After from one to six days the symptoms disappear. During the second, the silent phase, which lasts from one to three months, the patient loses considerably in weight. The third phase is manifested by a tumor in the epigastric region, and consecutive disturbances from compression, possible infection and rupture of the tumor. Radioscopic examination is indispensable and must be repeated at least three times. The prognosis is grave, unless an operation is done.

Archives des Maladies du Cœur, Paris

17: 257-320 (May) 1924

*Periarteritis Nodosa. W. Ivens.—p. 257.
Orthodiagrams of the Heart. G. Chaumet.—p. 279.
*Retinal Pressure and Cerebrospinal Tension. Bailliart et al.—p. 289.
*Paroxysmal Hypertension. J. Heitz.—p. 295.

Periarteritis Nodosa.—Ivens reports the microscopic findings in two cases and emphasizes that the etiology of this disease is still unknown. He considers as established that the disease is of infectious and not of embolic origin.

Connection of Pressure in Retina with Tension in Cerebrospinal Fluid.—Bailliart, Magniel and Saragea recall that the ratio between the general blood pressure and the pressure in the retinal artery in diastole is normally 0.45:1. In arterial hypertension the ratio is 0.50 and in some of their patients was even 0.70 and 0.96. They found in all these cases hypertension of the cerebrospinal fluid, from 30 to 75 cm. of water. Lumbar puncture decreased always the general and local blood pressure. The removal of from 5 to 10 c.c. of the fluid diminished the arterial pressure from 5 to 15 cm. of water. Their conclusion is that the abnormal retinal pressure and the consecutive disorders may be caused by hypertension in the cerebrospinal fluid. The puncture must be made very cautiously to avoid hemorrhage from the distended and often pathologic vessels laved by the fluid, as its pressure is reduced.

Paroxysmal Hypertension in Women.—Heitz cites instances of paroxysms of hypertension in angina pectoris, kidney and liver colic, and gastric crises of tabes; also, paroxysms of hypertension in lead poisoning in the intervals between colics. In Labbé's case a paroxysmal high pressure was associated with a tumor in the suprarenal medulla. A sudden rise of blood pressure precedes the convulsions of eclampsia in pregnancy. A permanent hypertension with albuminuria or kidney insufficiency has sometimes been noted ten or fifteen years after eclampsia. Heitz reports two rare cases in which paroxysmal hypertension with cerebral disturbances and vomiting occurred fourteen and twenty-three years after pregnancy eclampsia.

Bulletin de l'Académie de Médecine, Paris

91: 581-625 (May 13) 1924

Twins United by Interauricular Band. F. Balzer.—p. 589.
*Radio-Immunization of Cancer Tissue. C. Regaud.—p. 604.
Afollicular Tuberculous Chorioretinitis. F. Lagrange.—p. 608.
Sea Voyages as Therapeutic Measure. A. Loir.—p. 613.
Thorium in Chronic Leukemia. Cluzet and Chevallier.—p. 615.

Radio-Immunization of Cancer Tissues.—Regaud recalls the progressive loss of influence from the rays when a cancer is exposed to the roentgen rays repeatedly in doses too small to destroy the cancer cells. They become insusceptible to the action of the rays in the same dose, and are either entirely refractory or are influenced only by much larger doses of the rays. This has been ascribed to the flooding of the organism by resorption of large amounts of waste products from the cancer cells as they are modified by the irradiation. He rejects this assumption as the radio-immunization of the cancer tissues has been observed even with very small cancers. The probabilities are that it is a local rather than a general phenomenon. He suggests the possibility that the roentgen and the radium gamma rays release some toxic substance in the plasma laving the cells, or in some other element, and this toxic substance acts on the cells with which it is in direct contact. It modifies their physiologic function while leaving their anatomic structure intact. This would explain the paradoxic fact that the cancer cells become progressively less susceptible to the rays at the time that the slow growing, noncancer cell tissues are becoming progressively more susceptible. Although their anatomic structure is apparently unmodified, yet their vitality is impaired, and radiodermatitis, or necrosis of bone or soft tissues is liable to develop. He adds that the Germans have suggested a somewhat similar hypothesis, ascribing the action of the rays on cancer to release of cholin which in turn exerts a toxic action on the cancer cells.

91: 653-698 (May 27) 1924

*Adhesive Pericarditis and Cardiolysis. E. Delorme.—p. 663.
Transmission of Malta Fever by Goat's Milk. H. Martel et al—p. 671.
*Attenuated Pancreatitis. P. Delbet.—p. 676.
*Defense Against Infections in Hypothyroidism. Marinesco.—p. 681.
The Army Ration in the Field. E. Sacquépée.—p. 691.
Measles and Whooping Cough Prophylaxis Centers. R. Debré.—p. 693.

Adhesive Pericarditis and Cardiolysis.—Delorme extols the immediate and permanent results of this operation. The technic is easy and may be performed under a local anesthetic. Cardiolysis is especially indicated in patients with infectious pericarditis, consecutive to common infections as well as in cases of adhesion with dilatation of the heart. It is most likely to be successful if done early, but even with old adhesions it often answers the purpose perfectly.

Mild Pancreatitis.—Delbet refers to cases in which the diagnosis of aortitis had been made on account of pains and abnormal pulsation in the epigastric region. The pain or dull ache is generally diffuse or to the right or left of the median line and is increased by pressure. The patients clamor for relief, and their insistence suggests a psychopathic element. The pain increases toward the close of gastric digestion, and there is a sensation of oppression. If acute painful phases occur, they may be mistaken for gallstone or gastric ulcer attacks. The aorta pulsation is not abnormal but it is transmitted in an abnormal manner to the palpating hand, and can be distinguished over an area much broader than the aorta itself. This can be explained only by assuming the inter-

position of a thickened and indurated pancreas. The amylase in the urine was found twice the usual figure in such cases, but the proof definitely incriminating the pancreas was provided by a recent case in which a pseudocyst in the pancreas terminated the sequence and explained the long succession of preceding symptoms and attacks. The fluid in the pseudocyst was sterile, suggesting that these attenuated and generally curable forms of pancreatitis are of the same nature as the acute hemorrhagic form.

Connection of Myxedema with Lack of Immunity to Infection.—Marinesco reports two cases of congenital myxedema in which lack of the natural defenses, through deficiency of the thyroid gland, caused death from a succession of infectious diseases. He explains that the gland acts on the metabolism of the organs which produce the defensive antibodies, and the lack of or disturbance in thyroid function affects the nutrition of these organs and consequently decreases the resistance of the organism to infections.

91: 721-750 (June 10) 1924

*Feminine Hair Distribution in Man. C. Achard and J. Thiers.—p. 726.
*Alcoholic Cirrhosis in Women. E. Sergent and J. Pignot.—p. 730.
*Shock Treatment in Rabies. F. Arloing and L. Thévenot.—p. 733.
Malta Fever. F. Arloing and L. Langeron.—p. 736.
Roentgen Sensitiveness of the Suprarenals. A. Zimmern.—p. 739.
Nuclei of Cells in Inanition. J. Jolly.—p. 742.
*Nervous Diabetes. J. Camus et al.—p. 745.
*Physiology of Public Speaking. Marage.—p. 746.

Feminine Hair Distribution in Man.—Achard and Thiers report their observation of a man with a typical feminine distribution of hair. The testicles and penis were hypotrophic. The patient was not obese, but a slight disturbance of the alimentary glycemic reaction was observed.

Alcoholic Cirrhosis in Women.—Sergent and Pignot confirm Chauffard and Brodin's observation of the increased frequency of cirrhosis of the liver in women.

Shock Treatment in Rabies.—Arloing and Thévenot discovered the protective action of shock treatment in experimental tetanus. They now report similar experiments (injections of peptones or anaphylaxis with horse serum) in experimental rabies. The treatment was a complete failure in rabbits, probably because of their great susceptibility to the virus. It gave encouraging results in guinea-pigs.

Nervous Diabetes.—Camus, Gournay and Le Grand obtained glycosuria only six times in forty-five dogs with polyuria after experimental lesions of the infundibular and tuber region of the brain. The coincidence was more frequent in cats. Similar experiments in rabbits produced, after ten to thirty days, glycosuria lasting for one to several weeks. While the polyuria in dogs is easily obtained and may last for several years, the polyuria in rabbits is less constant and lasts only for days.

Physiology of Public Speaking.—Marage examined various public rooms in Paris for their acoustic properties. They determine the necessary intensity of voice and slowness of speaking. The longer the vocal cords the more energy is needed to produce a sound. Therefore, men become more fatigued by talking than women.

Journal d'Urologie Médicale et Chirurgicale, Paris

17: 353-448 (May) 1924

Recent Progress in Radiology of Urinary Tract. J. François.—p. 353.
*Pyelography in Renal Tuberculosis. M. Negro.—p. 378.
Papilloma of Bladder Causing Retention of Urine. C. Perrier.—p. 410.
Adynamic Ileus After Nephrectomy. J. Duvergey.—p. 413.
Woody Infiltration of Prostate Bed Long After Prostatectomy. L. Thévenot and J. Creyssel.—p. 417.
Prevention of Hemorrhage After Prostatectomy. Legueu et al.—p. 421.

Pyelography in Renal Tuberculosis.—Negro finds that catheterization of the ureter, combined with the phenolsulphonephthalein test, shows lesions of the parenchyma better, and is consequently more useful in diagnosis of renal tuberculosis than pyelography. He gives illustrated descriptions of fourteen cases which sustain his views.

Presse Médicale, Paris

32: 473-484 (May 31) 1924

*Asthma of Thyroid Origin. F. Widal and P. Abrami.—p. 473.
Vernes' Colorimetric Test for Active Syphilis. L. Brocq.—p. 476.
*Neurorelapses in Syphilis Under Bismuth Therapy. L. Cheinisse.—p. 478.

Effectual Action of Radiotherapy on Asthma in Exophthalmic Goiter.—Widal and Abrami describe four cases in which essential asthma was connected with manifestations of hyperthyroidism in exophthalmic goiter. The asthma attacks usually coincided with an emotion or the menses. The asthma was not of anaphylactic origin, as protein skin reactions, alimentary and respiratory, were negative. They recall a personal case of essential asthma associated with hypofunction of the thyroid gland in myxedema. They assume that defective endocrine functioning of a diseased thyroid gland causes changes in the vegetative system with consecutive asthma. Under roentgen-ray treatment of the thyroid gland, both the asthma and the exophthalmic goiter syndrome subsided simultaneously. The effect seems to be permanent so far as known up to two years after the treatment.

Neurorelapses in Syphilis Under Bismuth Therapy.—Cheinisse insists that a relapse of syphilis treated by bismuth is exceptionally rare, if a proper preparation and an adequate dose are used.

32: 497-508 (June 7) 1924

*Occupational Benzol Poisoning. F. Heim et al.—p. 497.
*Pathogenesis of Edema. H. Bénard and E. Biancani.—p. 498.
*Pulmonary Amebiasis and Amebic Bronchitis. J. Rouillard.—p. 502.

Occupational Benzene Poisoning.—Heim and his co-workers report thirty cases of chronic intoxication with benzene which is used as a solvent in rubber industries. The symptoms may be from the digestive apparatus (congestion of the buccal mucosa, benzol odor on the breath, gastric cramps); disturbances of a cardiovascular nature (hypertension, aortic atheroma, nosebleed), and, especially, nervous symptoms (headache, dizziness, irritability, weakness). They emphasize that eosinophilia is frequent in these cases, and the number of polymorphonuclears is normal or slightly diminished. Preventive measures consist in suction exhaust ventilation carrying off the fumes. The young and women are most susceptible.

Exaggerated Water Affinity of Tissue Colloids in Edema.—Bénard and Biancani emphasize that recent research suggests as one of the primordial causes of edema an increased water affinity of the tissue colloids. It parallels some metabolic disturbance.

Pulmonary Amebiasis and Amebic Bronchitis.—Rouillard describes the clinical course of amebic abscess of the lung in six observations collected by Lautman. He cites Petzetakis who first called attention to amebic bronchitis without abscess, and whose conclusion is that amebic dysentery is not a local intestinal disease, but a generalized infection caused by passage of the ameba into different organs through the circulation.

32: 509-516 (June 11) 1924

*Radiology of Mute Lung Cavity. E. Sergent.—p. 509.

Radiology in Diagnosis of Lung Cavity.—Sergent emphasizes that physical signs of a cavity may be found in cases when a cavity is absent; that roentgen ray shows sometimes a cavity when it does not exist, and that there are cavities with negative physical signs but a positive roentgenogram. Only a combined stethoscopic and radiographic examination can establish the diagnosis of a lung cavity.

32: 517-524 (June 14) 1924

*Dermographism. Pasteur Vallery-Radot, J. Krief and R. Jacquemaire.—p. 517.
*Lumbar Puncture in Congo Natives. M. Blanchard and J. Laigret.—p. 518.
Spartein as a Heart Tonic. L. Cheinisse.—p. 519.

Dermographism.—Pasteur Vallery-Radot and his co-workers recall that two symptoms exist in dermographism, an erythema and edema. While the erythema is produced by a hyperirritability of the vasomotor nerves, the edema depends on an external cause and on the circulation. The external factor is the slight stroke on the skin, which causes a change in the capillary walls and effusion of the plasma. Dermographism occurs when the circulation is normal; in cases with a disturbed local circulation this phenomenon is delayed, diminished or prevented. Thus the presence of three elements

is necessary for dermographism: vasomotor change of sympathetic origin, trauma, and a normal local circulation.

Harmlessness of Lumbar Puncture in Natives of the Congo.—Blanchard and Laigret report that lumbar punctures made in trypanosomiasis of the negroes were never followed by any immediate or tardy disturbances. The same tolerance is manifested by the natives for arsphenamin injections. The authors give a psychic reason, explaining it by a lower intellect of the people and the absence of apprehension as to the effect of the treatment.

Schweizerische medizinische Wochenschrift, Basel

54: 561-580 (June 19) 1924

Angina Pectoris. W. H. v. Wyss.—p. 561.
*Thrombosis and Embolism in Women. M. Holzmann.—p. 569.
*Pneumococcus Types in Switzerland. B. M. Herzog.—p. 573.

Thrombosis and Embolism in Women.—Holzmann surveys the large amount of material from the gynecologic clinic at Zurich in the last twenty years (34,041 obstetric and 13,457 gynecologic cases). The abdominal extirpation of uterine fibroids had the greatest incidence of both conditions: Thrombosis of the femoral vein followed in 3.1 per cent. of the women and fatal pulmonary embolism in 1.25 per cent.

Pneumococcus Types in Switzerland.—Herzog determined the pneumococcus type in fifty-seven lobar pneumonias. There were 26.3 per cent. of Type I; 24.6 of Type II; 38.6 of Type III, and 10.5 per cent. of Type IV. It seems, therefore, that the prognostically unfavorable Type III is more frequent in Switzerland than in other countries.

Pediatria, Naples

32: 697-760 (June 15) 1924

*Etiology of Acute Polyarthritis. M. B. Sindoni and G. Vitetti.—p. 697.
*Glycemia in Leishmaniasis. L. Auricchio.—p. 704.
*Hormones and Blood Reaction. G. Macciotta.—p. 712.
Intradermal Reaction in Malta Fever. M. Mitra.—p. 721.
Leukocytic Inclusions in Scarlet Fever. Cartia and Rapisardi.—p. 725.
Varicliform Eruption After Vaccination. A. Drago.—p. 740.

Etiology of Acute Polyarthritis.—Sindoni and Vitetti inoculated on various mediums, blood, exudate from the joints, filtrates from nasopharyngeal secretions, urine and cerebrospinal fluid, obtained from patients with acute polyarthritis. They state that minute gram-positive cocci which passed Chamberland filter L 9 grew anaerobically on Cristina's and Tarozzi-Noguchi's mediums. The method, germs, aspect and slow development of the culture, serologic findings and animal experiments bear a surprising resemblance to the findings of the same school in scarlet fever and measles.

Glycemia in Leishmaniasis.—Auricchio determined the blood sugar in twenty-three children with leishmaniasis and twelve healthy controls (including five cured of the disease). The blood sugar was always higher in the infected children. This is probably due to a disturbance of the liver function.

Hormones and Blood Reaction.—Macciotta found an increased titrable alkalinity of the blood in children after injections of pituitary extracts, especially those from the posterior lobe. Epinephrin and, in a higher degree, thyroid extracts lowered the alkalinity.

Riforma Medica, Naples

40: 529-552 (June 9) 1924

*Antihemolytic Urine Index in Liver Disease. D. Caltabiano.—p. 529.
*Glucose Injections with Vaccines. I. Iacono.—p. 530.
Sporotrichosis of Head. A. Zancani.—p. 532.
Sequelae of Arsphenamin. B. Maggesi and A. Malaguti.—p. 533.
Gunshot Injury of Teeth. A. Palieri.—p. 534.

Antihemolytic Urine Index in Liver Diseases.—Caltabiano slightly modified the biologic technic for determination of the antihemolytic index of the urine which seems to depend on the ratio between the cholesterol and the fatty acids excreted. He reports the results on thirty-one patients with affections of the liver. High figures are usually due to hypercholesterolemia or to renal lesions.

Glucose Injections with Vaccines.—Iacono injected emulsions of various germs in a 4.7 per cent. glucose solution in animals. The glucose diminished the toxicity of the germs and seemed to enhance the production of antibodies.

Anales de la Facultad de Medicina, Montevideo

9: 263-372 (April) 1924

*Dreams and Hallucinations. B. Etchepare.—p. 263.
Treatment of Grave Diabetes. C. Bordoni Posse.—p. 280.
*Present Status of Otorhinolaryngology. P. J. Martino.—p. 298.

Dreams and Hallucinations.—Etchepare refuses to accept the possibility of physiologic hallucinations. He regards dreams as pertaining to pathology, but emphasizes that the process and etiology of these "somnic hallucinations" differ entirely from those of waking hallucinations.

Present Status of Otorhinolaryngology.—In the course of this long review of the widening field of otorhinolaryngology, Martino emphasizes the importance of lumbar puncture to detect the first signs of complications of ear and nose affections. The pediatrist, the ophthalmologist and the neurologist should work hand in hand with the otologist and rhinologist, especially in the study of dizziness. The advent of arsphenamin has revealed an unsuspected participation of syphilis in the origin of deafness, both congenital and acquired. It may be monosymptomatic, and may escape our most delicate tests. He remarks that fully 25 per cent. of the syphilitic have some lesions in the apparatus of hearing or of balance, but when they apply for treatment of deafness or the vestibular syndrome it is too late for any help as a rule. Under prompt treatment of these lesions before they become definitely established, the function is always restored or at least not further impaired. When the syphilitic with vestibular syndrome gets beyond the stage of dizziness, the destructive process is complete. Latent syphilis of the ear is more frequent in congenital than in acquired syphilis, and progressive deafness in the young should always suggest possible syphilis.

Prensa Médica Argentina, Buenos Aires

10: 925-948 (May 30) 1924

*Dilatation of Ventricles in General Paralysis. A. M. Sierra.—p. 925.
*Experimental Research on Auricular Fibrillation. C. P. Waldorp.—p. 930.
Sources of Contagion in Tuberculosis. P. M. Barlaro.—p. 940.
The Coin Sign of Effusion in the Chest. J. E. Massun.—p. 946.

Dilatation of Ventricles in Progressive Paralysis.—Sierra relates that the lateral ventricles were abnormally dilated in all but three of the 400 cases of general paralysis that came to necropsy in his service. In 60 per cent. he found evidences of what he calls subependymitis.

Action of Quinidin.—Waldorp recalls that quinidin reduces the excitability of the ventricles and auricles, rendering them refractory to isolated impulses and the tetanizing current. By thus lengthening the refractory phase, the tendency to fibrillation is arrested. The quinidin does not act on the sympathetic but deadens the sensibility of the vagus. Even 2 cg. of quinidin per kilogram is enough to stabilize the heart in dogs so that 1,000 units of stimulation is unable to modify its rhythm. His recent research has confirmed that potassium increases the tonus of the vagus innervation of the heart, and he has established that it stimulates heterotopic impulses. The foci generating these abnormal impulses respond to the action of potassium chlorid differently from the response in the normotropic foci. The heterotopic foci may be stimulated to such a degree that the contracting power of the heart may be seriously impaired. Potassium salts may prevent auricular fibrillation by reenforcing the normotropic stimuli. The presence of potassium is indispensable for the normal automatic heart beat. In experiences with dogs described here, potassium chlorid did not prevent fibrillation but it reduced the excitability of the auricle to the faradic current, and it insured more rapid recuperation. For these and other reasons given, it seems rational to give potassium or foods rich in potassium when fibrillation is rebellious to quinidin treatment.

Revista de Cirugía, Buenos Aires

3: 41-80 (April) 1924

*Impediment Responsible for Retention of Testis. P. Chutro.—p. 41.
*Ileus from Gallstones. Alberto Gutiérrez.—p. 45.
Solid Tumors on the Mesentery. A. Zeno.—p. 55.
Anatomy of Scapulo-Humerus Region. Avelino Gutiérrez.—p. 65.

Barrier Impeding Descent of Testis.—Chutro has found in a number of cases of cryptorchidism that a fibrous septum at

the root of the scrotum was responsible for the nondescent of the testis. A passage should be opened cautiously through it. The finger is too coarse for this; if there is bleeding, an annoying hematoma may result.

Ileus from Gallstones.—Gutiérrez adds six more cases to the nine that have been presented in the local surgical society. The total operative mortality was 53 per cent. In Guillaume's case the gallstone was felt by palpation through vagina and rectum, and the operation disclosed it in a loop of small intestine in the pouch of Douglas. In one of Gutiérrez' cases the calculus was as large as a hen's egg, and of pure cholesterol. All his patients died within twenty-four hours although intervention had been restricted to simple extraction of the calculus, which was always readily found. There was no history of gallstone colic in five of this group; the calculus must have made a passage for itself from the gallbladder directly into the duodenum. In Arce's case a second calculus was found in another loop and a third was voided naturally the next day.

Archiv für klinische Chirurgie, Berlin

129: 657-836 (June 20) 1924

*Teratomas in Anterior Mediastinum. V. Schmieden.—p. 657.
Arthritis Deformans After Trauma of Hip Joint. R. Bonn.—p. 696.
*Masked Staphylococcal Bone and Joint Disease. Rosenburg.—p. 700.
*Prognosis in Exophthalmic Goiter. A. Troell.—p. 709.
Mechanically Induced Defects in Bone Growth. H. Maass.—p. 725.
Bone-Forming Energy of the Periosteum. E. Riess.—p. 750.
*Postoperative Adhesions. Schönbauer and Schnitzler.—p. 758.
Plastic Operation on Hip Joint. P. Drevermann.—p. 764.
*Surgical Pathology of the Duodenum. E. Melchior.—p. 778.
Traumatic Diaphragmatic Hernia. O. Schumacher.—p. 782.
Tabetic Arthropathy of the Spine. C. Wittkowsky.—p. 793.
Case of Fracture of Pisiform Bone. B. Pfab.—p. 800.
*Peritoneum Implant to Reenforce Suture of Esophagus. L. Schönbauer and V. Orator.—p. 806.
*Suprarenal-Ovarian Syndrome. A. O. Wereschinski.—p. 810.

Teratomas in Anterior Mediastinum.—Schmieden reports the successful removal of a teratoma, as large as a man's head, from a woman of 24. As the lung did not expand by the sixth week, the operation was completed with thoracoplasty, and the woman was dismissed in excellent condition after a ten weeks' stay in the hospital. The intermittent course of the disturbances from pressure is characteristic, owing to the irregular secretion and resorption in the cavities of the tumor. Recurring pleuritis is another feature. In a second case described, the symptoms did not call for removal. There was nothing to indicate tuberculosis in either case. He accepts the dictum that teratomas developing in the interior of the body are from early aberrant own tissue, not twin tissue, the potent embryonal growth force of the aberrant material explaining the development of the various tissues found in the tumor. He recently removed a sacral teratoma from a male infant, aged 3 weeks, and eighteen months later a second teratoma developed just above the site of the first.

Masked Forms of Staphylococcus Bone and Joint Disease.—Rosenburg has been applying the antistaphylolysin test systematically in obscure cases of bone and joint disease, and found it of inestimable assistance in differentiating masked staphylococcus infection in some of his 170 cases. In acute osteomyelitis the reaction becomes positive in eight to eleven days after the first symptoms. In a recent series of sixty-eight cases of osteomyelitis, the process was chronic in seven. The bone process in three of the young men, was first explained by the lysin reaction indicating suppuration. The gravity of the process is reflected in the intensity of the reaction. In two cases of Schlatter's disease the reaction was weakly positive. Possibly the mildness of the infectious process in Perthes' disease explains the negative antilysin reaction. He is inclined to accept that a positive reaction can be relied on as a sign of staphylomycosis. A faintly positive reaction may throw light on the etiology of "growth pains" in some cases.

The Prognosis in Exophthalmic Goiter.—Troell operated in forty of his sixty cases, and analyzes the outcome in connection with the basal metabolism findings and the blood pressure. He is convinced that we can rely on these findings in estimation of the risk of operative measures, especially the tendency to higher blood pressure on repeated tests. One of the four that died might have recovered, he remarks, if he had heeded the rise in the differential blood pressure by 108 per cent. The basal metabolic rate was increased by 78 per cent. He was misled by the fact that the pulse kept comparatively steady during the operation, and he consequently completed it at one sitting.

Postoperative Intraperitoneal Adhesions.—Schönbauer and Schnitzler found strands of muscle tissue in the adhesions in the seven cases studied. After injury of the serosa, with broad adhesion of the musculature of the intestine to the parietal peritoneum, the movements of the bowel gradually stretch the broad adhesion into a narrow band. The muscle tissue in the band may contract and thus induce pain.

Diagnosis of Stenosis of Lower Duodenum.—Melchior reports two cases which demonstrate that deep stenosis of the duodenum is not always accompanied by reflux of bile into the stomach. With arteriomesenteric occlusion of the duodenum, the regurgitation of bile into the stomach is the predominant symptom, exactly the reverse of what he observed in these two cases. He mentions this as another argument against the purely mechanical origin of the arteriomesenteric occlusion, suggesting that a neurotic excessive secretion of bile may be a factor.

Peritoneum Flaps to Reenforce Suture of the Esophagus.—Schönbauer and Orator report promising results in experiments on dogs.

Correlated Disturbances Between the Suprarenals and Ovaries.—Wereschinski analyzes the cases in which hyperfunction of the suprarenals is accompanied by atrophy of the ovaries. This suprarenal-ovarian syndrome in the fetus may entail pseudohermaphroditism; in children it entails sexual precocious development, and in adult women virilism. In a case described, the woman, aged 29, was a pseudohermaphrodite, with rudimentary ovaries. A hypernephroma was removed from one suprarenal. Transient benefit followed implantation of ovarian tissue. Early recognition of the correlation in such cases between the suprarenals and the ovaries might allow surgical intervention in time to ward off serious disturbance.

Deutsche medizinische Wochenschrift, Leipzig

50: 787-826 (June 13) 1924

*Psychology and Medicine. T. Ziehen.—p. 787.
*Treatment of Gastric Ulcer. I. Boas.—p. 789.
*Control of Insulin Treatment. H. Strauss.—p. 791.
The General Practitioner and Diabetes. R. Ehrmann.—p. 792.
*The Heart in Epidemic Dropsy. H. Gerhartz.—p. 794.
*Diarrhea in Neuroses and Avitaminoses. B. Leichtentritt.—p. 794.
*Congenital Tuberculosis. W. Kuhle.—p. 796.
Diagnosis of Dermatoses. W. Scholtz.—p. 797.
Technic of Saline Infusion. J. Fessler.—p. 799.
*Paralysis of the Pharynx in Encephalitis. Boenninghaus.—p. 801.
Acute Serous Peritonitis. B. Auerbach.—p. 801.
*Sign of Approaching Death. Orlowski.—p. 802.
*Open Air Treatment of Whooping Cough. O. Bossert.—p. 803.
Cutaneous Infection with Chickenpox. O. v. Niedner.—p. 804.
Survey on Infectious Diseases. O. Moog.—p. 804.
Medicolegal Cases. Ebermayer.—p. 806.
Practitioner's View on Specialist. O. Schellong.—p. 809.
"Roentgen-Ray Treatment of Tuberculosis." Bacmeister.—p. 811.

Psychology and Medicine.—Ziehen believes that only experimental psychology is of interest to medicine. It does not consist in expensive apparatus and laboratories but in systematic examination of psychic processes on many individuals under varied conditions. The progress of psychologic methods has not been utilized sufficiently in neurology. Many psychiatrists believe that the frontal lobes have some special relation to the higher intellectual functions. In spite of this the papers published on affections of the frontal lobes contain only reports on mental tests which would be just sufficient in a case of fully developed general paralysis. He reviews the present problems of psychology and the advantages which would be derived in psychiatry from their closer study.

Treatment of Gastric Ulcer.—Many patients with peptic ulcers cannot afford to leave their occupation. Boas had good results with the following treatment: Only fluid food (milk, cream, soups, soft eggs) is allowed in the first week. If the patient improves, zwieback or white bread in milk is added.

Mashed potatoes, sweet cooked fruits or thick gruels improve the diet in the third week. In the fourth week the patient may take mashed vegetables, omelets, white cheese and white bread and butter. The caloric value does not need to be high before the occult bleeding stops. Half an hour before meals the patients were given a teaspoonful of a mixture of sodium bicarbonate, magnesium oxid (or carbonate in diarrhea) and extract of hyoscyamus (doses are not given). The patients felt relieved within one or two weeks, and the occult bleeding stopped within from four to six weeks. Only grave hemorrhages require the old treatment in bed.

Control of Insulin Treatment.—Strauss believes that determination of the blood sugar before and during insulin treatment is essential only in patients with slight glycosuria, because of the possibility of a renal diabetes. It is advisable but not absolutely necessary in other cases—especially not with acidosis, if the doses are increased cautiously.

The Heart in Epidemic Dropsy.—Gerhartz examined a case of idiopathic dropsy with bradycardia. There were no signs of an affection of the heart.

Diarrhea in Neuroses and Avitaminoses.—Leichtentritt believes that chronic diarrhea of constitutional origin may deprive the child of vitamins. The resulting condition has to be treated not only with mixed food but preferably also with an increased supply of vitamins.

Congenital Tuberculosis.—Kuhle reports the history of an infant whose mother died from miliary tuberculosis twenty-four hours after delivery. The infant was separated from her immediately after birth and developed well at first. Pirquet's reaction (performed weekly from the fourth week) became positive in the eighth week together with subfebrile temperatures. Bronchitis developed in the ninth week, and the child died in the twelfth week, from miliary tuberculosis.

Paralysis of the Pharynx in Encephalitis.—Boenninghaus observed three cases of unilateral paralysis of the constrictor muscles of the pharynx after influenza. The usual method of diagnosing the condition by producing the vomiting reflex is disagreeable. It is sufficient to observe the pharynx during phonation.

Sign of Approaching Death.—Orlowski observed a sudden and exceedingly strong sex desire in five patients, between 20 and 30 years of age, almost exactly three weeks before death from sepsis of six or seven months' standing or tuberculosis.

Open Air Treatment of Whooping Cough.—Bossert extols the advantages of open air treatment of whooping cough. It does not shorten the disease but it makes it milder, and influences the outcome of pulmonary complications.

Klinische Wochenschrift, Berlin

3: 1105-1152 (June 17) 1924

*Motor Function of Bile Ducts. K. Westphal.—p. 1105.
*Blood Calcium in Tetany. P. György.—p. 1111.
*Ferments of the Skin. J. Wohlgemuth and Y. Yamasaki.—p. 1113.
*Germs in Human Cancer. F. Blumenthal et al.—p. 1114.
*Water and Salt Metabolism in Menstruation. R. Heilig.—p. 1117.
*Electrocardiogram After Insulin. Wittgenstein and Mendel.—p. 1119.
Roentgen Rays and Inflammation. Heidenhain and Fried.—p. 1121.
Pylorospasm. S. Paul.—p. 1123.
*Alkali Reserve in Liver Affections. Adler and Jablonski.—p. 1124.
*Eosinophilic Granules. A. Neumann.—p. 1128.
Dry Complement and Dry Hemolysin. W. Bachmann.—p. 1128.
Affection of the Second Metatarsal Bone. O. Engelke.—p. 1129.
Psyche in Nervous Gastric Troubles. E. Leyser.—p. 1131.
Reform of Sickness Insurance. E. Fränkel.—p. 1134.
Recent Works on Foot and Mouth Disease. H. A. Gins.—p. 1135.

Motility of Bile Ducts.—Westphal frequently produced pain by tapping over the phrenic nerve in affections of the gallbladder. Sometimes it is sufficient if the patient makes a deep inspiration, holding his head to the left side, because the phrenic nerve is thus stretched. Stasis of bile may be due to hypertonia of Oddi's muscle or to hypotonia of the gallbladder. The first type is due to an increased vagal action and accounts for the disturbances of the gallbladder in pregnancy. The second type causes less subjective disturbances. In the spastic type, hot pads and 0.0005 or 0.001 gm. atropin, two to four times daily, after meals, are indicated. A 20 per cent. solution of camphor in oil of peppermint (from 25 to 30 drops) rapidly relieves the spasm for a few hours. Atropin does not help in the hypotonic type; here magnesium sulphate is indicated.

Blood Calcium in Tetany.—György determined the blood calcium and blood phosphorus before and after treatment with ammonium phosphate. The changes were the reverse of those obtained by treatment with ammonium chlorid, for the blood calcium was lowered and the phosphorus increased. In spite of this, the apparent and latent signs of tetany disappeared. He concludes that tetany depends on the ionization and not on the total amount of calcium.

Ferments of the Skin.—Wohlgemuth and Yamasaki found ferments in human skin free from blood. Its diastatic action was stronger than that of liver tissue and almost as strong as in serum. The lipolytic ferment was resistant to quinin and atoxyl. It was also present in the subcutaneous tissue, and in the fat from the kidney region and mesentery. A peptolytic ferment, a strong catalase and a phenolase which oxidized pyrocatechin more strongly than epinephrin, were among their findings.

Germs in Human Cancer.—Meyer found in the secretion of a mammary cancer, bacilli of the *Bacillus tumefaciens* group. With these bacilli, she produced, together with Blumenthal and Auler, typical tumors in plants. They examined thirty human tumors and found similar micro-organisms in twelve of them—only in soft or ulcerative tumors—never in hard closed neoplasms. Injection of these bacilli mixed with kieselguhr and edema fluid from one of the patients produced small tumors in animals, which retrogressed after a short time. Nevertheless, the tumor could be transplanted in four generations, and showed a structure resembling carcinoma or sarcoma. No bacilli were found in these tumors—except once in the first generation—nor in the metastases.

Water and Salt Metabolism in Menstruation.—Heilig found a retention of water and salt in the first two days of menstruation.

Electrocardiogram After Insulin.—Wittgenstein and Mendel report an inversion of the T wave in the electrocardiogram of dogs after insulin. It may be due to the hypoglycemia.

Alkali Reserve in Liver Affections.—Adler and Jablonski found a lowered alkali reserve in the blood of patients with various affections of the liver. There was no parallelism between the degree of hypocapnia and of injury of the liver.

Eosinophilic Granules.—Neumann succeeded in isolating eosinophilic granules from coagulated blood. They seem to consist of a colorless eosinophil iron-free substance containing very little nitrogen (from 0.4 to 0.5 per cent.) and a colored substance and an iron salt.

Medizinische Klinik, Berlin

20: 847-880 (June 22) 1924

Treatment of Surgical Tuberculosis. Oehlecker.—p. 847.
*Clairvoyants in Criminal Cases. A. Hellwig.—p. 851.
*Cellulitis in Orbit. A. Löwenstein.—p. 853.
*Aortic Stenosis. H. Gerhartz.—p. 854.
Somnambulistic Hypnosis. P. Schilder.—p. 856.
*Hereditary Defects in Parietal Bone. M. Cohn.—p. 857.
Bismuth Treatment of Syphilis. Smechula.—p. 860. Conc'n.
Bronchial Cancer. A. Fortwaengler.—p. 862.
*Injection Needles. E. Raab.—p. 863.
*Inactivation of Serum. N. Takenomata.—p. 865.
Recent Works on Disease of Heart and Vessels. E. Edens.—p. 867.
Weight and Measurements Statistics in Children. K. Freudenberg.—p. 879.

Clairvoyants in Criminal Cases.—Hellwig, director of a court in Potsdam, became convinced by his experience that the use of "clairvoyants" for criminal investigations is only misleading. He saw no instance and found none in the literature in which the medium revealed any circumstance not already known to some of the persons present.

Cellulitis in Orbit.—Löwenstein describes the symptoms and treatment of cellulitis of the orbit—one of the few ocular affections which endanger life. Headaches precede it. The condition is caused in 60 per cent. of the cases by sinus affections. The whole upper border of the orbit is frequently painful. The lids are swollen, and there is exophthalmos in the direction determined by the site of the inflammation. The most dangerous type is that occurring after extraction of teeth. He describes one case (second lower molar) with

recovery after early subperiostal evacuation of the pus. All other similar cases described in the literature ended fatally.

Aortic Stenosis.—Gerhartz measured the interval between the beginning apex impulse of the heart and the systolic murmur in aortic stenosis. It averaged 0.087 second. If the first heart sound is short there is a sufficient interval between its end and the beginning of the murmur. The time between the contraction and the opening of the aortic valves is not prolonged.

Hereditary Defects in Parietal Bone.—Cohn describes defects in the ossification of the parietal bones in the region of the foramina in a pair of probably univitelline girl twins. Their mother has the same anomaly.

Injection Needles.—Raab has devised an injection needle with eyes near its connection with the syringe. A thread is drawn through them and if the needle breaks at the usual point at the base, it can be easily extracted by the thread. This needle is especially useful in nerve blocking for anesthesia of the oral cavity.

Inactivation of Serum.—Takenomata found in Wassermann and Sachs-Georgi reactions that an inactivation of serums for five minutes at a temperature of 60 C. is at least as valuable as the usual thirty minutes at 55 C. He even had the impression that the results were more specific.

Münchener medizinische Wochenschrift, Munich

71: 769-812 (June 13) 1924

Pernicious Anemia. R. May.—p. 769.
*Shock Treatment with Alcohol Injections. B. Spiethoff.—p. 773.
*Secretin in Nettle. M. Dobreff.—p. 773.
*Food and Duodenal Fluid. L. Bogendörfer and W. Buchholz.—p. 774.
*Postoperative Pneumonia. R. Eden.—p. 775.
Trendelenburg's Phenomenon on Hip Joint. H. Kehl.—p. 776.
*Calot's Treatment of Surgical Tuberculosis. T. Fohl.—p. 777.
Immunity and Fertilization. F. M. Lehmann.—p. 780.
Economical Treatment of Venereal Diseases. L. v. Zumbusch.—p. 783.
"Iontophoretic Analgesia." F. Wirz.—p. 784.
"Blood After Roentgen Irradiation." H. H. Matoni.—p. 785.
Malaria and Epilepsy. E. Stransky.—p. 787.
Heredity of Dwarf Growth. A. Kraft.—p. 788.
Diabetes Mellitus. F. Umber.—p. 788.
Venereal Disease in England. H. Haustein.—p. 790.
Population Statistics. E. Maurer.—p. 793.
Legal Standing of Social Insurance Physicians. Jaeger.—p. 794.

Shock Treatment with Alcohol Injections.—Spiethoff injects into the buttocks from 0.1 to 0.3 c.c. of absolute alcohol with sterile water to bring the amount to 1 c.c. The intervals are from one to four days according to the focal reactions. He claims the same results as with parenteral protein therapy in trichophytosis, furuncles, cellulitis, gangrenous infectious processes, some forms of tuberculosis, psoriasis and gonorrheal complications. The treatment is not painful except at the moment of the injection.

Secretin in Nettle.—Dobreff discovered in extracts from nettles (Urtica dioica) a very strong secretin resembling that of spinach.

Food and Duodenal Fluid.—Bogendörfer and Buchholz investigated the influence of food on the contents of the duodenum in healthy subjects. The tube was left in place for several days (up to twelve). The concentration of the ferments and the microflora changed with the food. The shifting of the alkaline reaction toward the neutral precedes the invasion by colon bacilli.

Postoperative Pneumonia.—Eden made injections of calcium salts in 240 patients (ninety-four laparotomies) on the evening before and after operation, rarely later. The mortality from bronchopneumonia in laparotomies was 5 per cent. before this treatment was instituted. Since that time no patient has died from it and only three had a light bronchopneumonia.

Calot's Treatment of Surgical Tuberculosis.—Fohl considers Calot's injection method as rational and good. It gives especially excellent cosmetic results.

Wiener klinische Wochenschrift, Vienna

37: 609-634 (June 19) 1924

*Phototherapy of Laryngeal Tuberculosis. M. Hajek.—p. 609.
*Idem. E. Wessely.—p. 611.
*Thyroid and Blood Proteins. F. Starlinger.—p. 617.
Shock Treatment of Diabetic Gangrene. G. Singer.—p. 621.
*Insulin and Temperature. A. Arnstein.—p. 622.
Puncture of the Bladder. D. Kokoris.—p. 624.
Technic for Intravenous Injections. E. v. Thurzó.—p. 624.

Phototherapy of Laryngeal Tuberculosis.—Hajek introduces and Wessely describes in detail the technic of treatment of tuberculosis of the upper air passages, especially of the larynx, with artificial light. He obtained among 164 patients 28 per cent. local cures and 70 per cent. ameliorations. Dysphagia was especially well influenced.

Thyroid and Blood Proteins.—Starlinger finds that thyroid extracts change, primarily, the colloids of the blood plasma. He believes that their action on the thyroid is only secondary.

Insulin and Temperature.—Arnstein observed an antipyretic action of small doses of insulin.

Zeitschrift für Urologie, Leipzig

18: 321-368, 1924

Sarcoma of the Prostate. N. Taschiro.—p. 321.
Nonspecific Epididymitis. F. Dietel.—p. 326.
The Verumontanum During Micturition and Ejaculation. Orlowski.—p. 333.
Hematuria with Abnormal Kidneys. Bennemann.—p. 335.
*Renal Predisposition to Gout. Armbruster.—p. 340.
*The Kidneys in Relation to Gout. Armbruster.—p. 341.
Stenosis of Ureter from Aberrant Vessel. Oelsner.—p. 349.
Gonococcal Infection in Males. Balog.—p. 352.

The Renal Predisposition to Gout.—Armbruster assumes that the tendency to hypertrophy of fat tissue occurs in the adipose capsule of the kidney as well as elsewhere. This, he believes, hampers the functioning of the organ by interfering with the radiation of heat.

Zentralblatt für Chirurgie, Leipzig

51: 1111-1158 (May 24) 1924

Some Biologic Aspects of Scars. E. Payr.—p. 1112.
*Rectal Carcinoma. H. Küttner.—p. 1119.
Potassium in Postoperative Retention of Urine. Reimer.—p. 1121.
A Modified Splint in Fracture of Clavicle. Wildbolz.—p. 1124.
Exclusion of the Appendix. S. Kofmann.—p. 1125.
Plastic Operation on Protruding Ears (Gersuny). Biesenberger.—p. 1126.
*Picric Acid for Disinfection of Operative Field. Türschmid.—p. 1128.

Rectal Carcinoma.—Küttner takes exception to the view expressed at the recent surgical congress that rectal cancer must be operated on in essentially the same manner as cancer of the breast and uterine carcinoma; that the abdominal route must always be chosen lest metastases in the liver be overlooked; that in every case the whole sphincter apparatus must be sacrificed, and that, as a routine measure, a permanent abdominal artificial anus must be established. He reports the results of the conservative sacral operation in 800 cases. There were 36 per cent. of cures extending over three years or more, 24 per cent. extending over five years; 52.9 per cent. of these patients secured complete and 17.6 per cent. almost complete continence. Many are filling high and influential positions, which would be impossible with the handicap of an artificial anus.

Picric Acid for Disinfection of the Operative Field.—Türschmid has found picric acid more effective than tincture of iodin for the disinfection of the operative field.

Zentralblatt für innere Medizin, Leipzig

45: 465-488 (June 14) 1924

*Suboccipital Puncture. A. Hartwich.—p. 466.
*Blood Calcium in Hypertension. E. Kylin.—p. 471.

45: 489-504 (June 21) 1924

Carbon Monoxid Poisoning. O. Klein.—p. 489.

Suboccipital Puncture.—Hartwich prefers suboccipital puncture to lumbar puncture.

Blood Calcium in Hypertension.—Kylin found a little lower blood calcium concentration in essential hypertension than in the controls. He considers the condition as a disturbance of the vegetative system.

Casopis lekaruv ceskych, Prague

63: 905-936 (June 14) 1924

*Loose Body in Peritoneal Cavity. R. Jedlicka and H. Sikl.—p. 905.
Sporotrichosis. B. Rejsek.—p. 907. Cont'd.
Hypoplasia of One Eyeball. V. Tuma.—p. 912.

*Sympathetic and Skin Sensitiveness. E. Polák.—p. 913.
*Eye Movements in Chronic Encephalitis. M. Springlová.—p. 916.
*Juvenile Paresis with Pituitary Syndrome. J. Neverilová.—p. 919.

63: 937-972 (June 21) 1924

Primary Tuberculosis of Lungs. F. Skalník.—p. 937.
Obsession Neurosis and Taboo. N. Osipov.—p. 940.
Insufflations in Roentgenologic Diagnosis. J. Simon.—p. 646.

Loose Body in Peritoneal Cavity.—Jedlicka and Sikl report the history of a patient with a loose intraperitoneal body the size of a hen's egg. The microscopic findings made it probable that it was originally a pedunculated tubercle resembling the pearl disease of cattle.

Sympathetic and Skin Sensitiveness. — Polák found in sympathectomized frogs a distinct increase in sensitiveness of the skin for tactile and chemical stimuli. The change was pronounced on the operated side and persisted to the death of the frog (up to forty-five days). It was slighter and transitory on the other side. He obtained similar results on rabbits, testing the corneal sensibility with Frey's hair method.

Movements of Eye in Chronic Encephalitis. — Springlová observed three patients in the chronic stage of epidemic encephalitis who suffered from attacks of painful conjugated upward deviation of the eyeballs, lasting sometimes for several hours. Nystagmus was rare. The conjunctiva became red. The phenomenon was associated in one case with anesthesia of the whole skin (possibly hysterical), in others with other tonic spasms. The patient who was anesthetic during the attack had a prevalence of sympathetic tonus at that time, while she was vagotonic in the intervals.

Juvenile Paresis with Pituitary Syndrome. — Neverilová describes a case of juvenile progressive paralysis in a boy 16 years of age. The patient's height corresponds to that of a child aged 6 or 7. The body and buttocks are fat and the external genital organs are hypoplastic. Alimentary glycemia curves resembled the curve observed in diabetes insipidus by Vanýsek. There was also a tendency to polydipsia and polyuria.

Tohoku Journal of Experimental Medicine, Sendai

5: 1-110 (June 14) 1924

*Ingestion and Excretion of Amylase. Y. Masumizu.—p. 1.
*Lipolytic Action of Serum. J. Amaki.—p. 13.
Action of Drugs on Intestinal Absorption. M. Nakamura.—p. 29.
*Secretion of Epinephrin in Asphyxia. S. Kodama.—p. 47.
Proteolytic Action of Serum. IV. V. VI. K. Okubo.—p. 71, p. 89, p. 103.

Ingestion and Excretion of Amylase.—Masumizu found no changes in the diastatic action of serum when administering various amylolytic ferments. The activity of the urine was increased. (In English.)

Lipolytic Action of Serum.—Amaki attributes the errors in direct titration of fatty acids to the presence of cleavage products of proteins. Extraction with ether is necessary. With this precaution he found blood serum inactive, and organ extracts, except from the pancreas, only slightly active. The liver and lungs play no rôle in the fat metabolism as far as these experiments can determine. (In German.)

Secretion of Epinephrin in Asphyxia. — Kodama's results indicate a uniformly increased epinephrin output in asphyxia. (In English.)

Acta Medica Scandinavica, Stockholm

60: 491-600 (May 21) 1924

Titration of Anacid Stomach Contents. A. Norgaard.—p. 491.
*The p_H of Gastric Contents. A. Norgaard.—p. 498.
Ketonuria. E. Begtrup and E. Rosling.—p. 511.
*Widal's Hemoclastic Crisis. T. Sonden.—p. 524.
Incomplete Bundle Branch Block. N. Stenström.—p. 552.

The p_H of Gastric Contents.—Norgaard finds that the titration methods to determine the acidity of the stomach contents are preferable to determination of its p_H content by indicators.

Widal's Hemoclastic Crisis. — Sonden found alimentary leukopenia practically always in hysteria, not infrequently in cyclothymia and dementia praecox, but rarely in healthy subjects. The white blood count varied so widely, spontaneously, that no conclusions could be drawn in the single cases. The method is not suitable for a liver function test.

Acta Pædiatrica, Upsala

3: Supplement (May 17) 1924

*Studies in Scurvy. J. A. Höjer.—p. 8.

Scurvy.—This supplement (278 pages with many illustrations) is devoted to the experimental study of scurvy. (In English.) Anatomic changes were found not only in the bones but in all the organs examined. They consist chiefly in atrophy and necrosis, and they appear at a very early period.

Hospitalstidende, Copenhagen

67: 273-288 (April 30) 1924

Operative Cases of Pituitary Disease. E. Schmiegelow.—p. 273. Conc'n.
*Bacteriology of Appendicitis. Bagger and Mikkelsen.—p. 284. Conc'n, p. 305.

Bacteriology of Acute Appendicitis.—The streptococcus was found alone in 2 of the 160 cases of acute appendicitis examined and the pneumococcus in none. The enterococcus was obtained in pure culture in 3 cases. In the 14 fatal cases the enterococcus was found in 4, and the colon bacilli in all the fatal cases and in all but 8 of the total 160 cases. The staphylococcus accompanied it in one fatal case.

67: 289-304 (May 7) 1924

Tumor in the Greater Omentum. S. Pontoppidan.—p. 302.

67: 305-320 (May 14) 1924

*The Mechanism Regulating Neutrality in Acidosis. J. Nørvig and E. J. Larsen.—p. 313. Conc'n, p. 321.

The Acid-Alkali Balance in Acidosis and Epilepsy.—Nørvig and Larsen tabulate in minute detail the findings in eight febrile patients, in four with true diabetes, four with renal diabetes and one pregnant woman. The aim was to determine the changes in the ratio between the ammonia and the p_H of the urine, which is a constant ratio in health, ammonia being the physiologic regulator of the acid-alkaline balance. Intake of acids or of alkalis alters the ratio regularly in the corresponding sense, but there seems to be a difference in the result according as the acid is of endogenous origin or supplied from without. The increase in the ammonia content proceeds alike with both, although the p_H drops with exogenous acid. The regulating mechanism is always abnormal in epileptics during or between seizures, even with intervals of months. In their thirty cases the findings were very irregular, and paradoxic in some. Contrary to the regular fluctuations with practically constant ratio in other conditions, in epileptics there seems to be a primary pathologic state of the regulating mechanism. The organism seems to lack the normal property of getting rid of the excess of acid or alkali. The production of ammonia is irregular; sometimes too much is produced and then not enough, regardless of the needs of the organism.

67: 321-336 (May 21) 1924

*Functional Disturbances of the Extremities. P. Lorenzen.—p. 331. Conc'n, p. 337.

Functional Disturbances of the Extremities. — Lorenzen comments on the mental factor in writer's cramp and similar affections in which the livelihood depends on the use of the limb. They can usually be traced to some slight sprain or other injury which throws the muscular apparatus a trifle out of gear. The irregular coordination brings a strain on unusual muscles, and the worry completes the vicious circle. He advises exercising the limb, training the patient to relax all the muscles not directly engaged in the movement. He has noticed that the muscular development in musicians with these functional disturbances shows that their fingers and hands were not physiologically adapted to the severe work imposed by their technical training. He has found parenteral protein injections sometimes useful in functional disturbances of the extremities but the main efforts should be directed to correct the constitutional tendency to neuroarthritism.

67: 337-352 (May 28) 1924

*The Vital Capacity in the Tuberculous. T. V. Hyge.—p. 341.

The Vital Capacity in the Tuberculous.—Hyge gives the figures from 112 patients with pulmonary tuberculosis tested repeatedly for the vital capacity. It was below normal in some but in others it was above normal, so that it is of no help in the early diagnosis.